

FIG. 1A

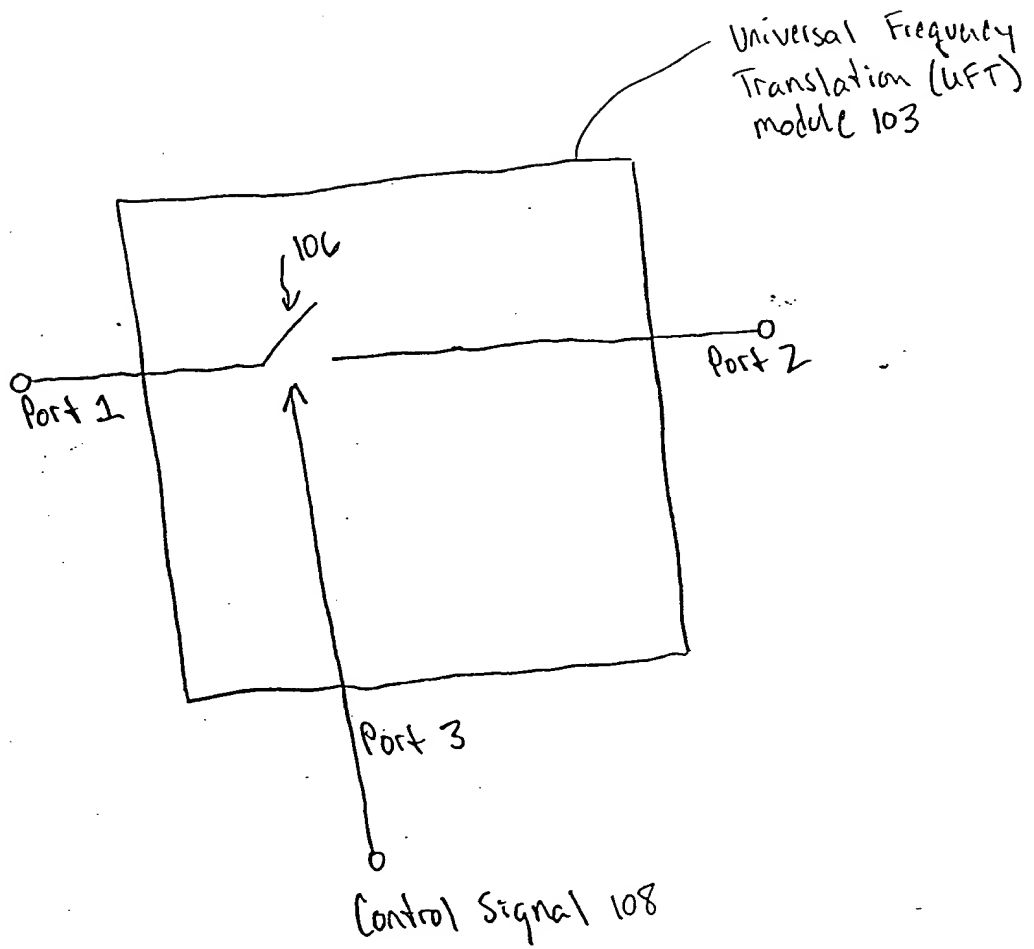


FIG. 1B

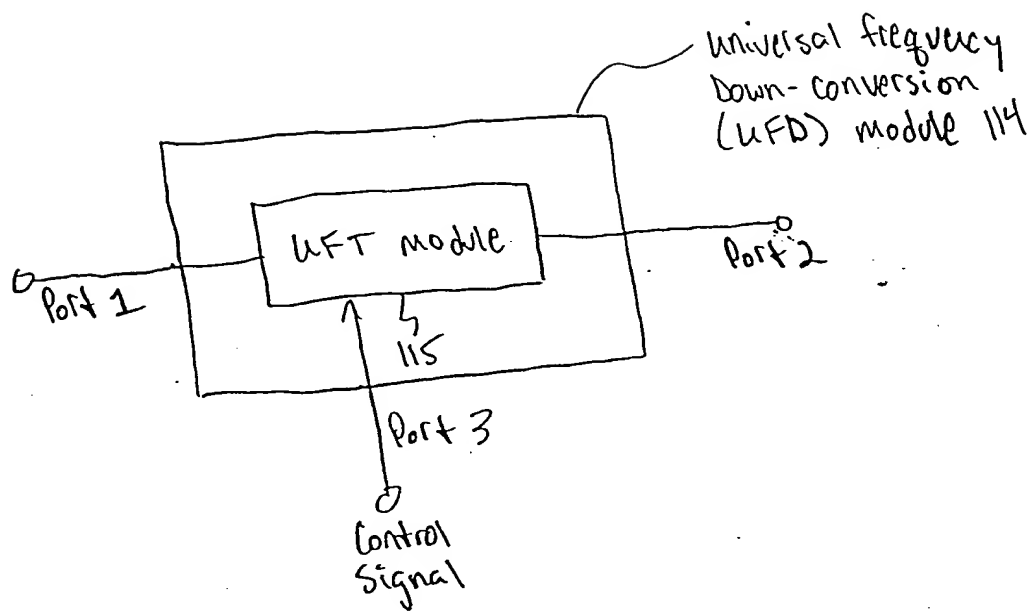


FIG. 1C





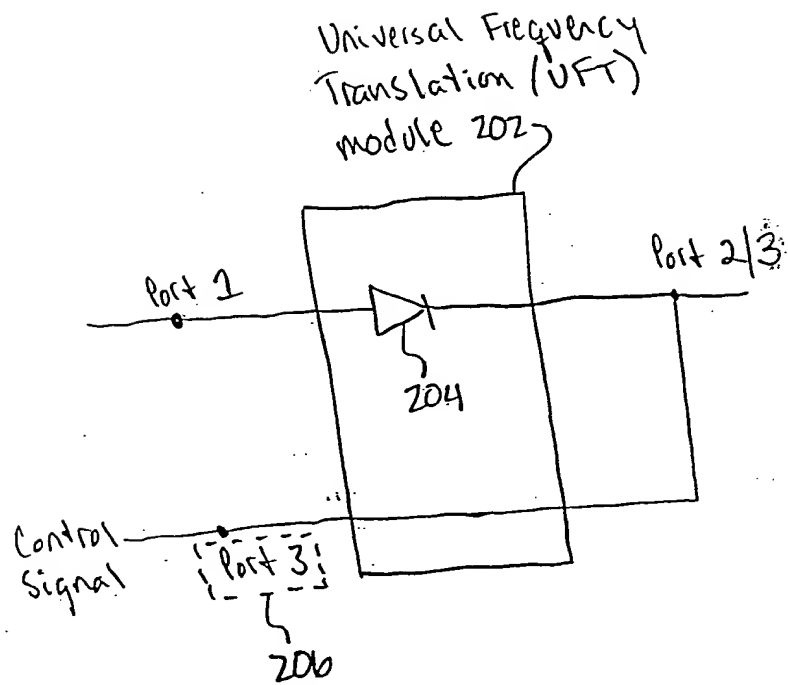


FIG. 2A

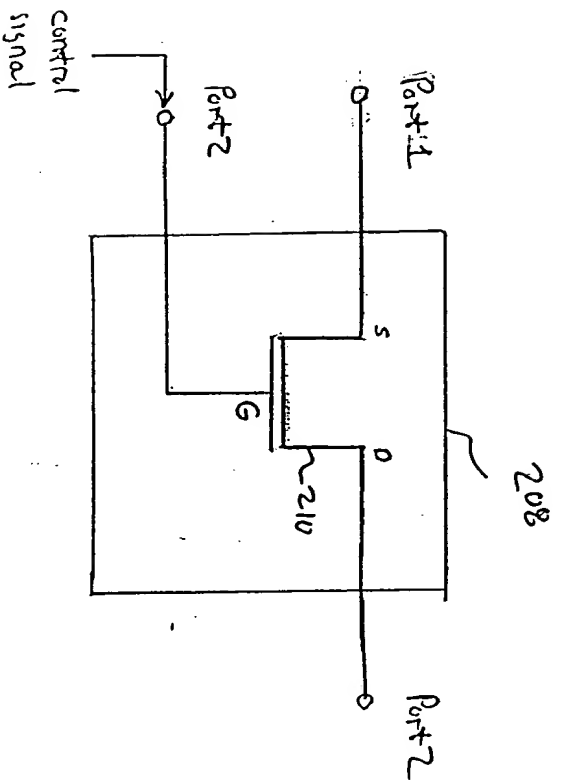


FIG. 2B



Universal Frequency  
Up-conversion (UFCU) module 401

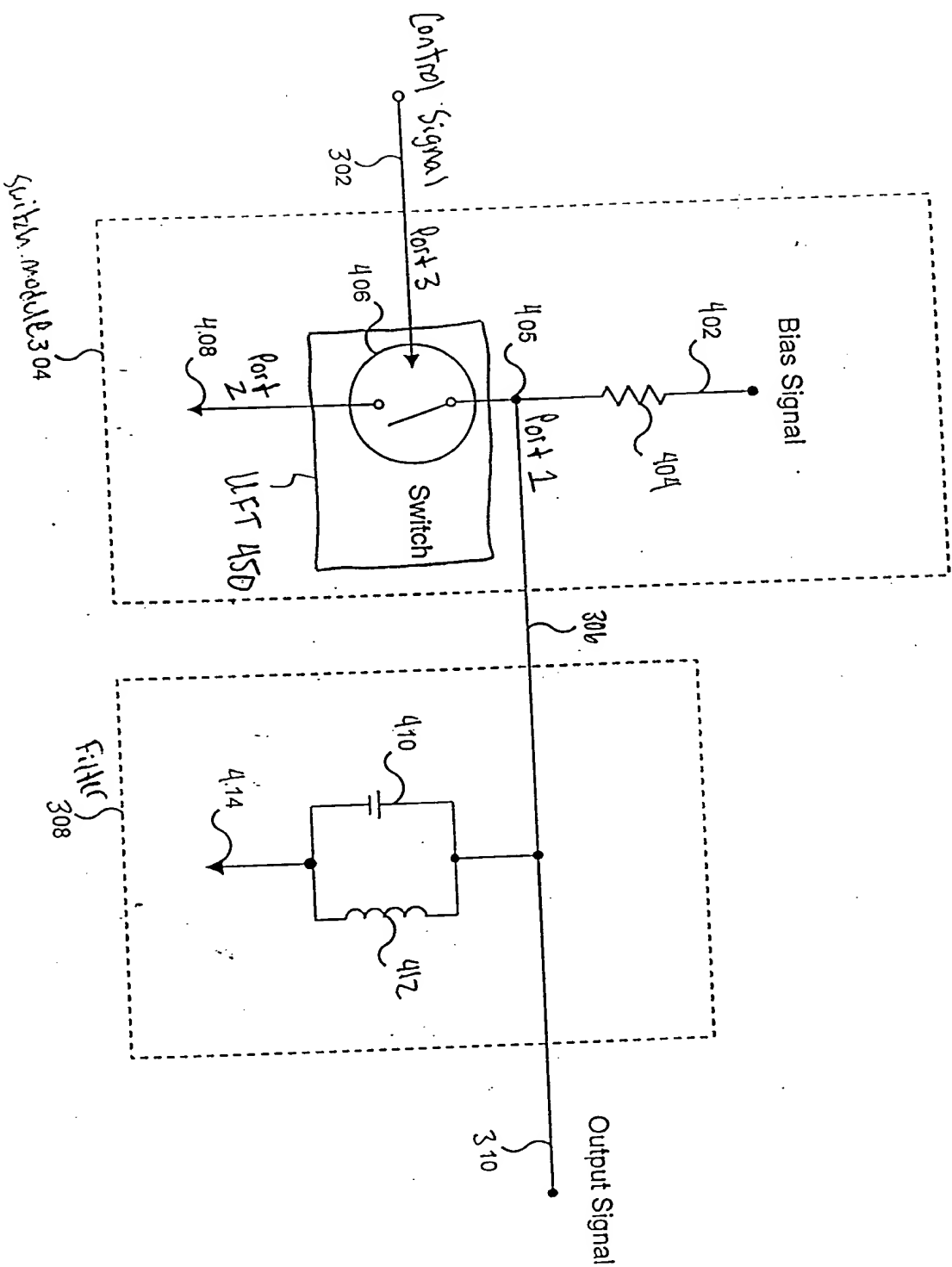


FIG. 4



W

INFORMATION  
SIGNAL  
602

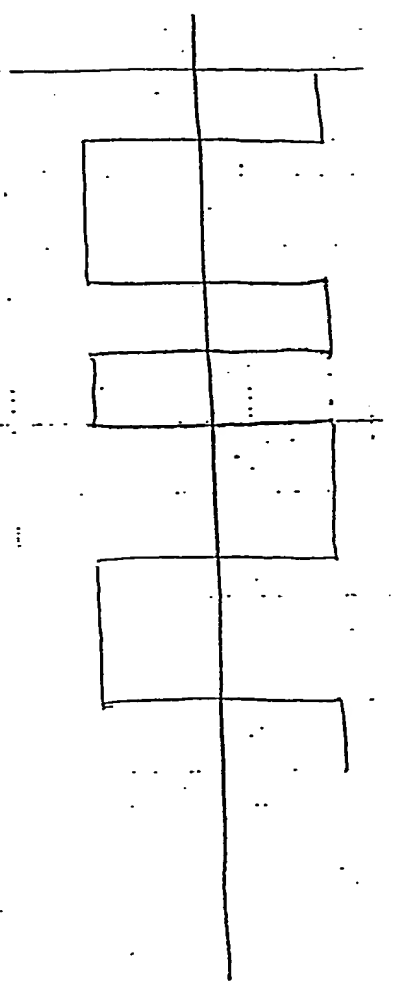


FIG. 6A

OSCILLATING  
SIGNAL  
604

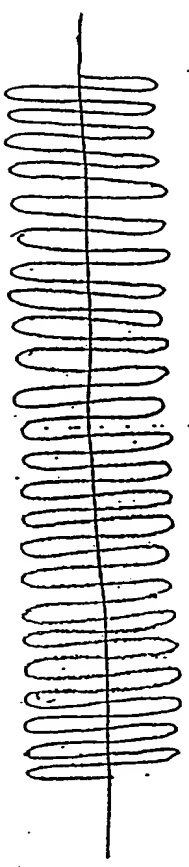


FIG. 6B

FREQUENCY MODULATED  
INPUT SIGNAL  
606

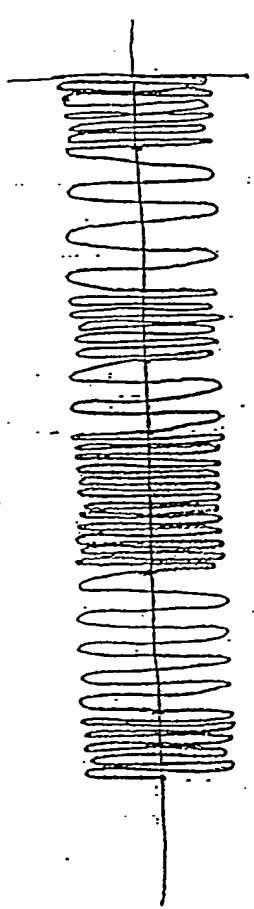


FIG. 6C

HARMONICALLY  
RICH SIGNAL  
(SHOWN AS SQUARE WAVE)  
608

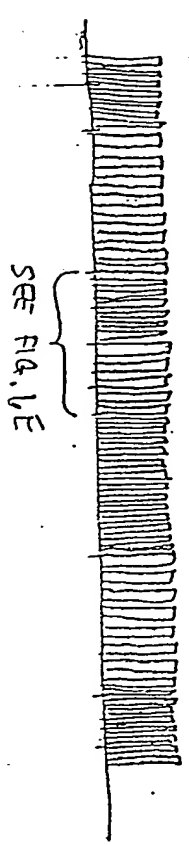


FIG. 6D

FIG. 6

EXPANDED VIEW OF  
HARMONICALLY RICH  
SIGNAL 608

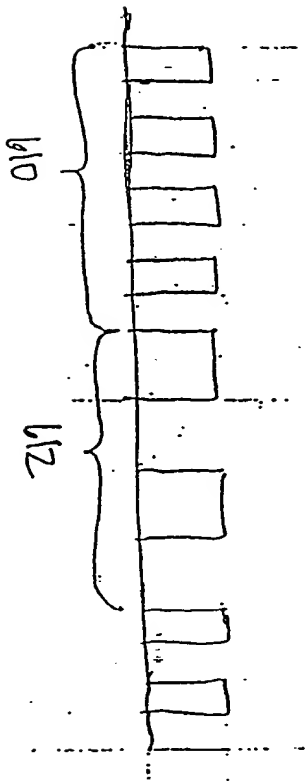


FIG. 6E

HARMONICS OF  
SIGNAL 610  
(SHOWN SEPARATELY)

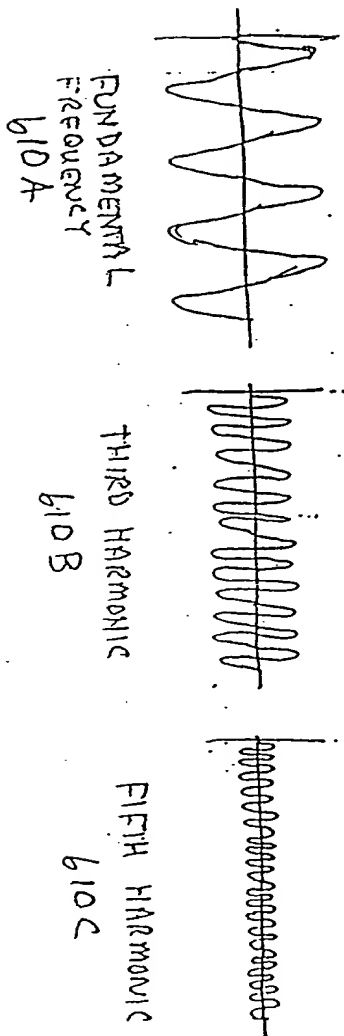


FIG. 6F

HARMONICS OF  
SIGNAL 612  
(SHOWN SEPARATELY)

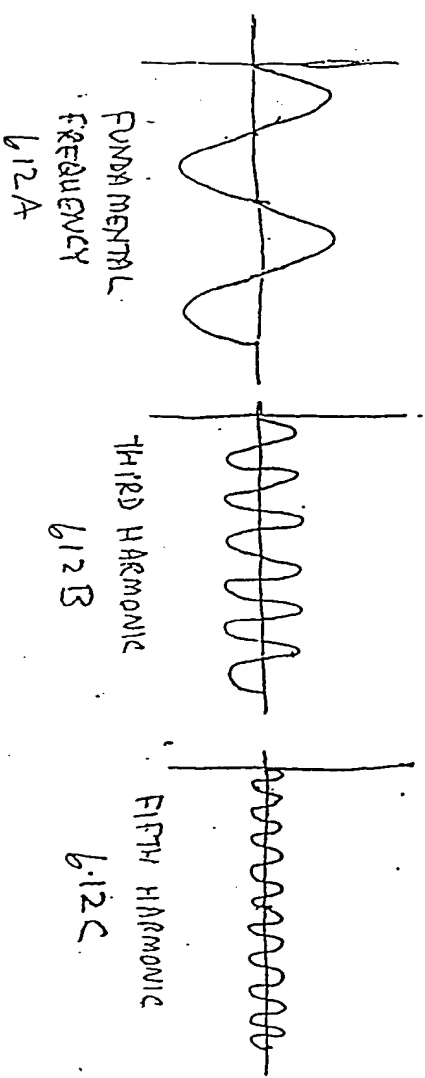


FIG. 6G

FIG. 6 (cont.)

3

HARMONICS OF  
SIGNALS A10 AND  
A12. (SHOWN  
MULTIPLY BUT  
NOT SUMMED)

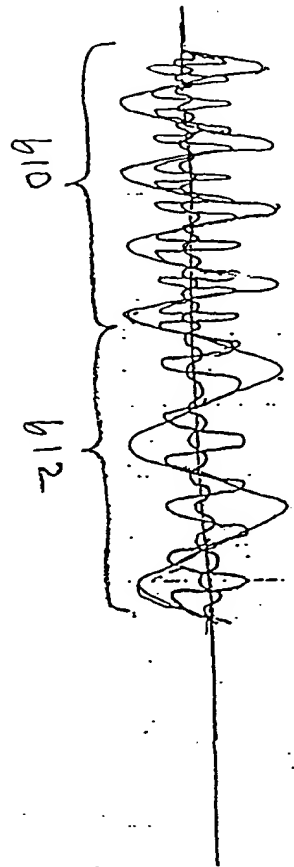


FIG. 6H

FILTERED  
OUTPUT  
SIGNAL  
A14

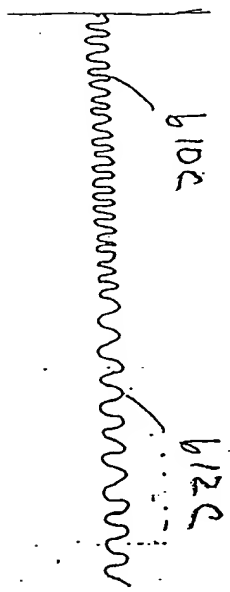


FIG. 6I

FIG. 6 (cont)



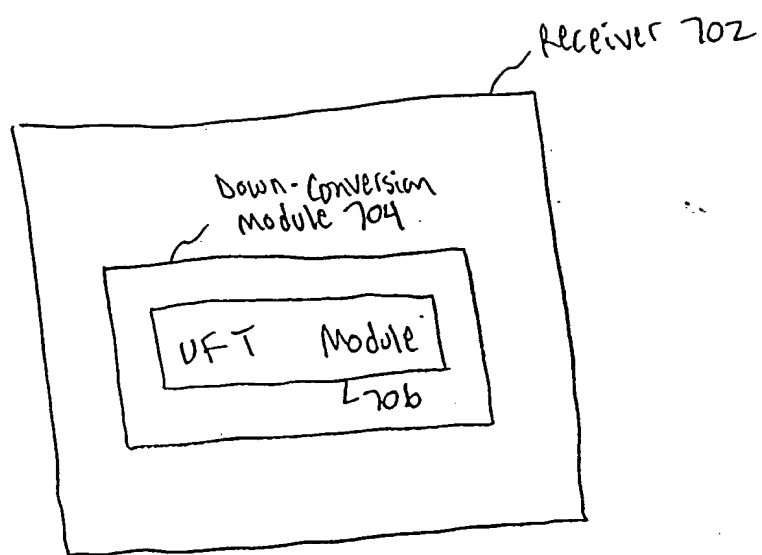


FIG. 7

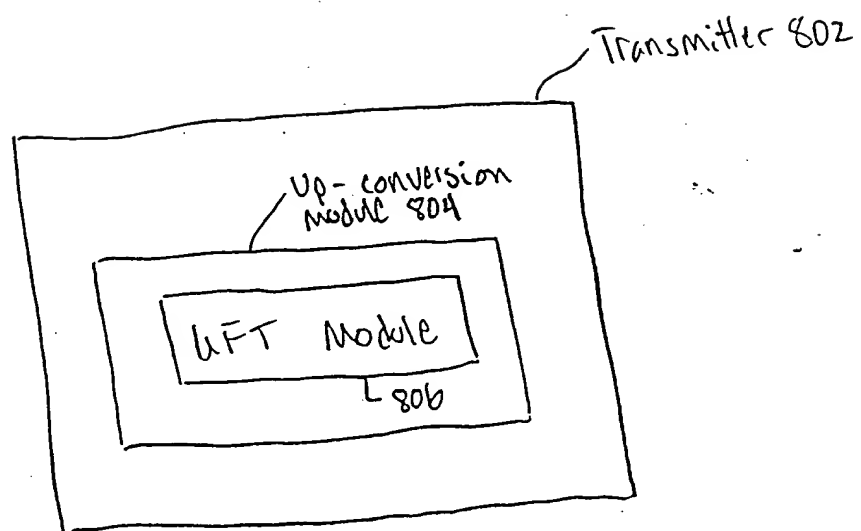


FIG. 8

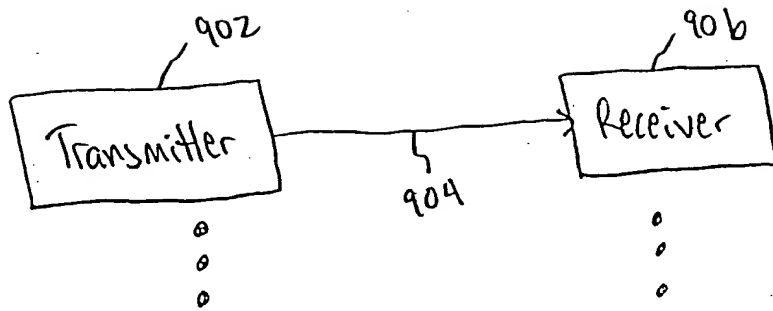


FIG. 9





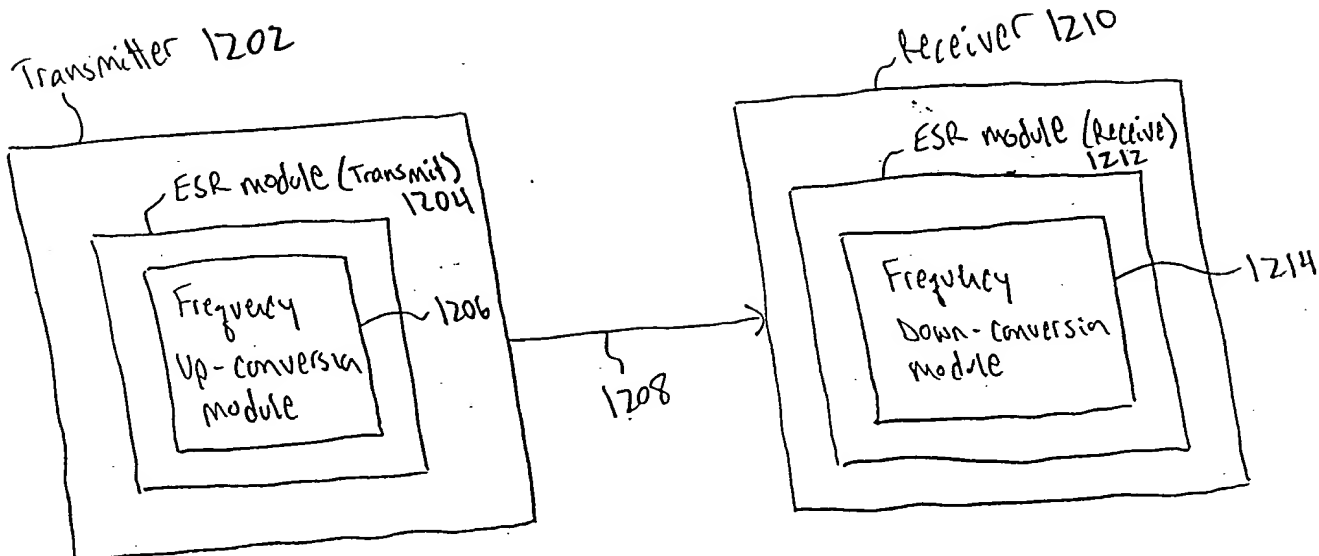


FIG. 12

Unified Down-converting  
and Filtering (UDF) module 1302

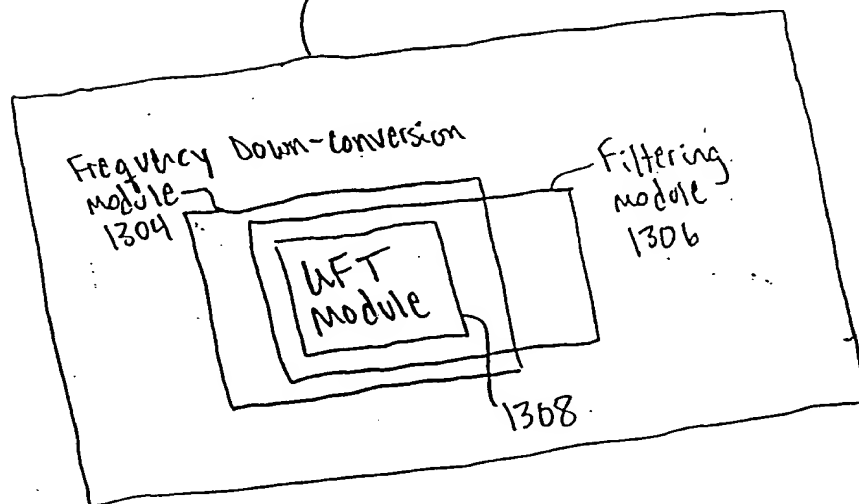
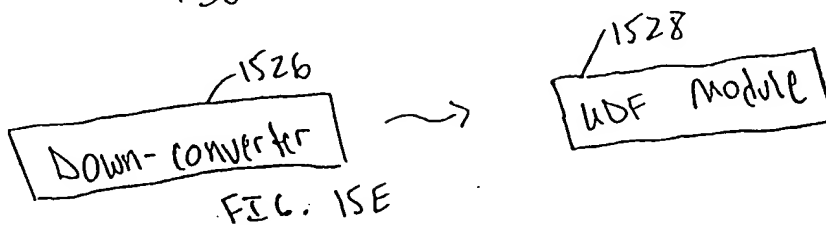
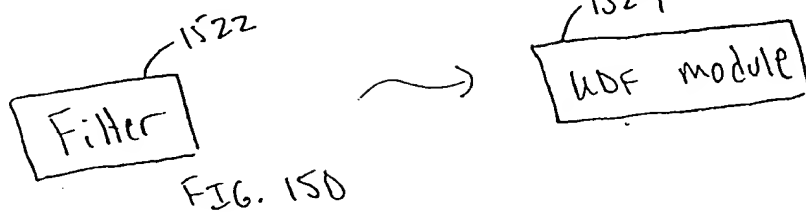
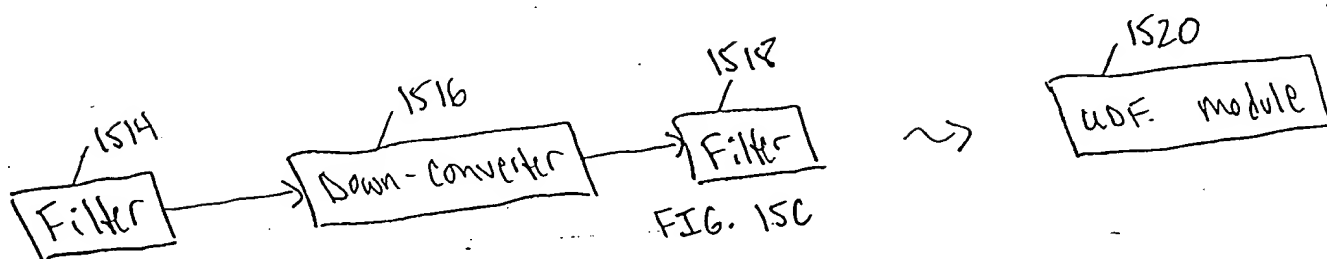
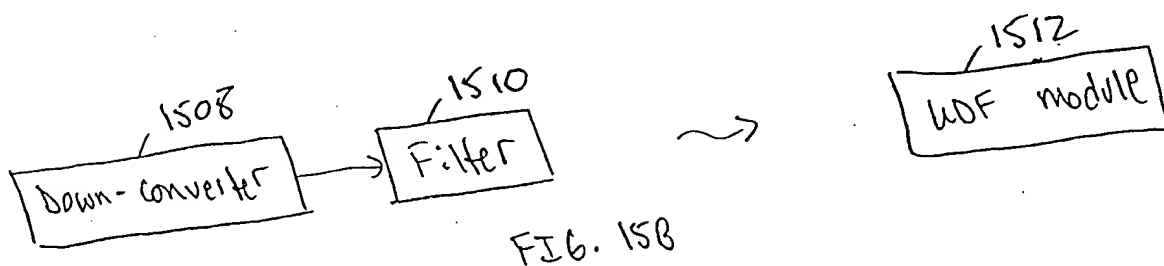
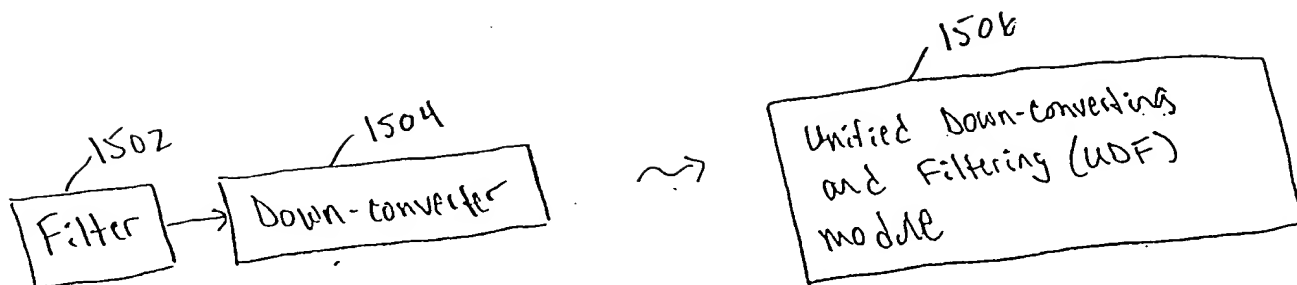


FIG. 13









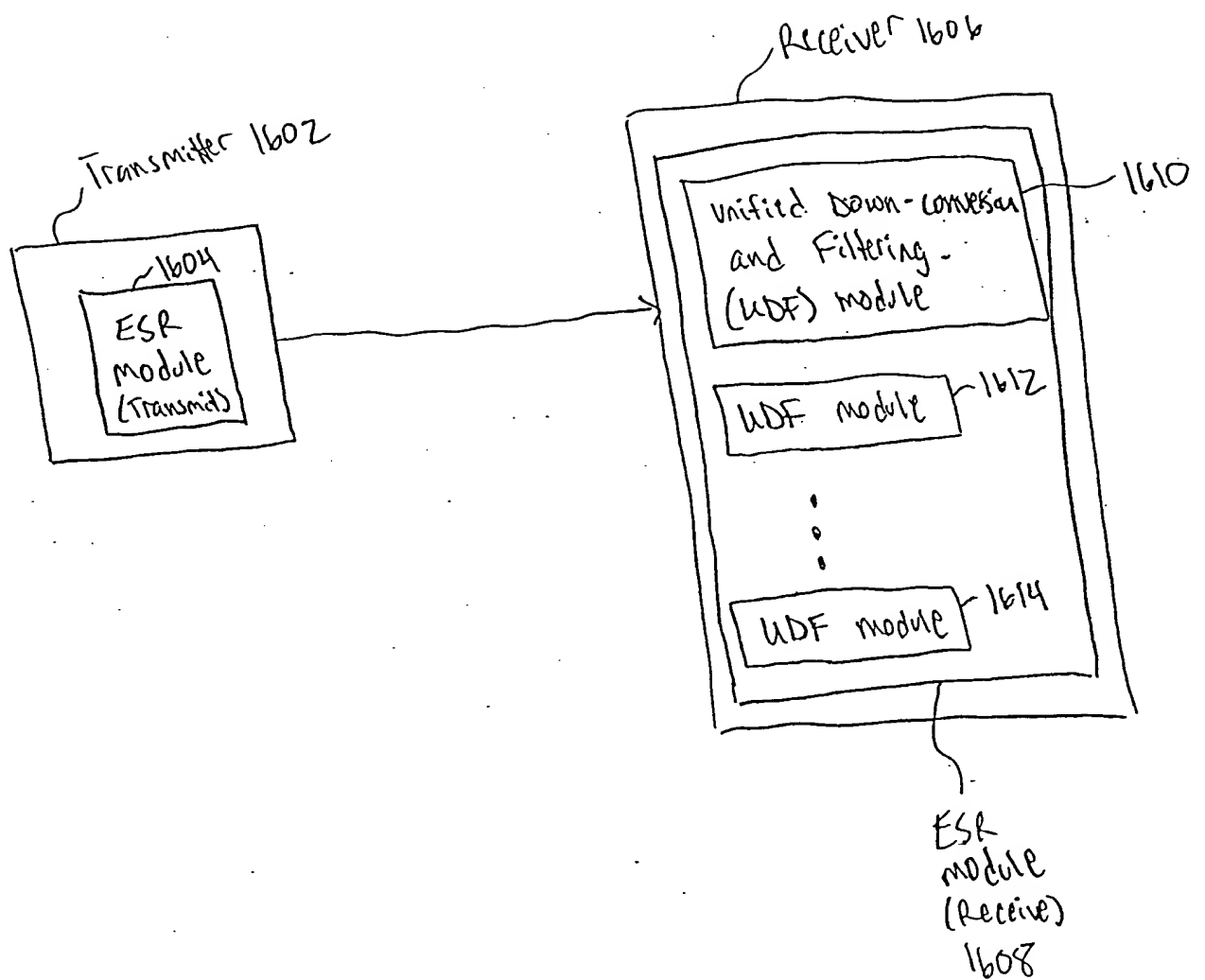


FIG. 16

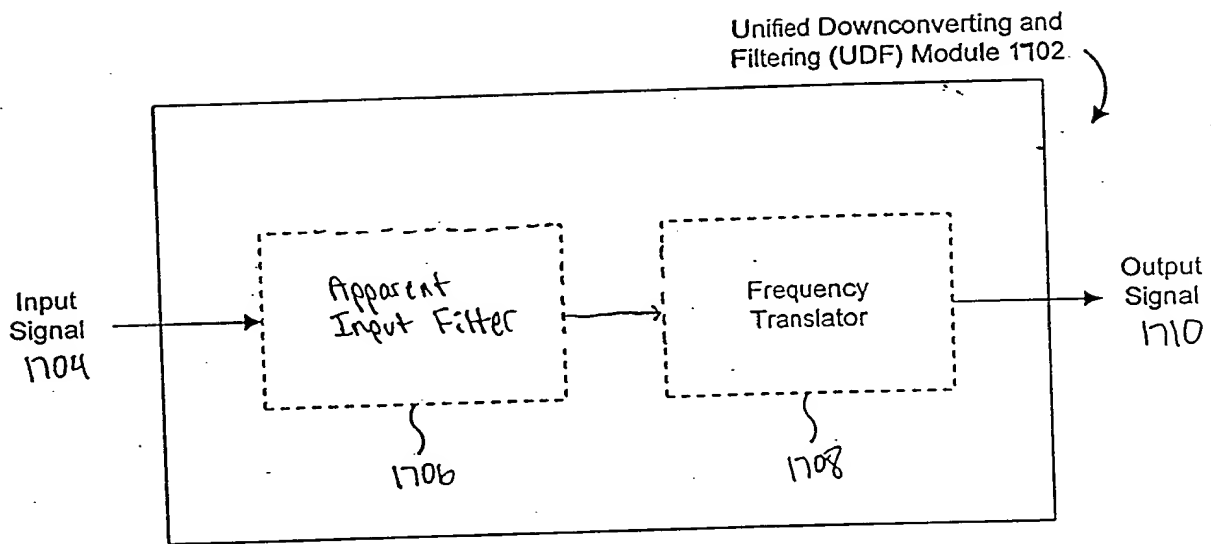


FIG. 17

1802

Time Node	t-1 (rising edge of $\phi_1$ )	t-1 (rising edge of $\phi_2$ )	t (rising edge of $\phi_1$ )	t (rising edge of $\phi_2$ )	t+1 (rising edge of $\phi_1$ )
1902	$VI_{t-1}$ <u>1804</u>	$VI_{t-1}$ <u>1808</u>	$VI_t$ <u>1816</u>	$VI_t$ <u>1826</u>	$VI_{t+1}$ <u>1838</u>
1904	—	$VI_{t-1}$ <u>1810</u>	$VI_{t-1}$ <u>1818</u>	$VI_t$ <u>1828</u>	$VI_t$ <u>1840</u>
1906	$VO_{t-1}$ <u>1806</u>	$VO_{t-1}$ <u>1812</u>	$VO_t$ <u>1820</u>	$VO_t$ <u>1830</u>	$VO_{t+1}$ <u>1842</u>
1908	—	$VO_{t-1}$ <u>1814</u>	$VO_{t-1}$ <u>1822</u>	$VO_t$ <u>1832</u>	$VO_t$ <u>1844</u>
1910	— <u>1807</u>	—	$VO_{t-1}$ <u>1824</u>	$VO_{t-1}$ <u>1834</u>	$VO_t$ <u>1846</u>
1912	—	— <u>1815</u>	—	$VO_{t-1}$ <u>1836</u>	$VO_{t-1}$ <u>1848</u>
1918	—	—	—	—	$VI_t$ - <u>1850</u> $0.1 * VO_t$ $0.8 * VO_{t-1}$

FIG. 18

use module 1972  
(band pass)

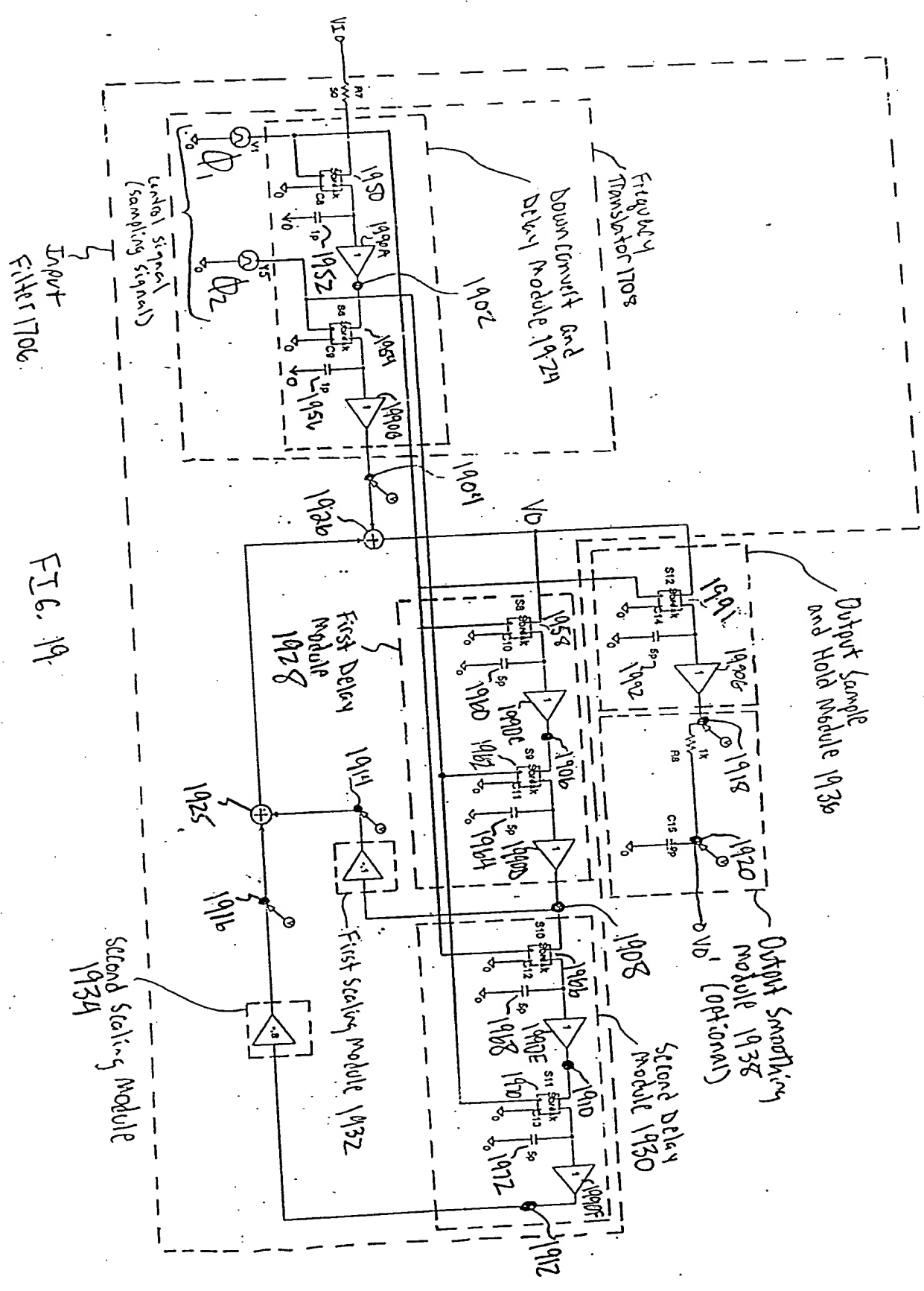


FIG. 19

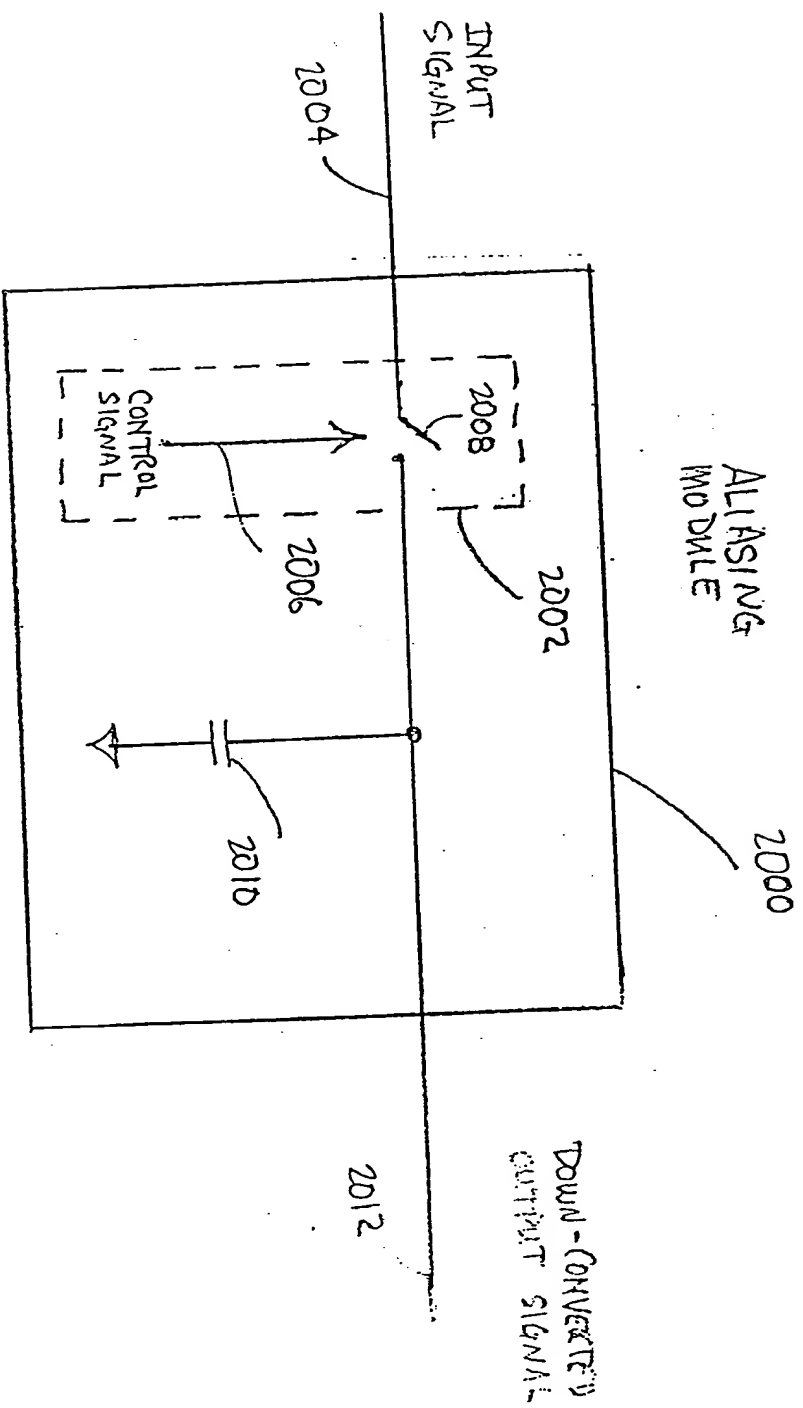
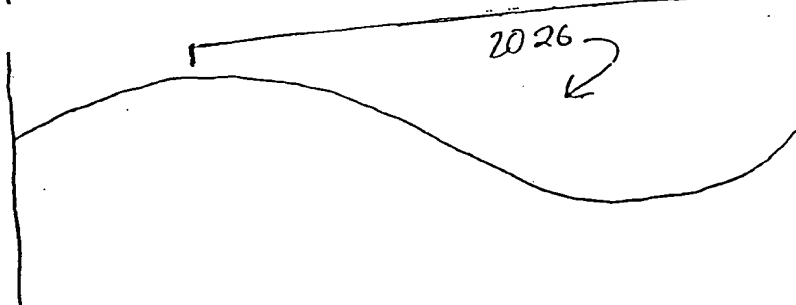
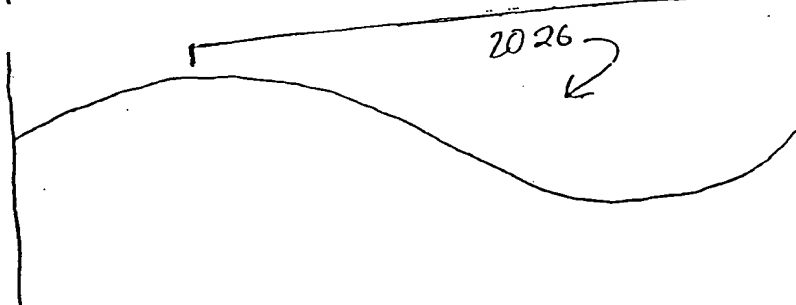
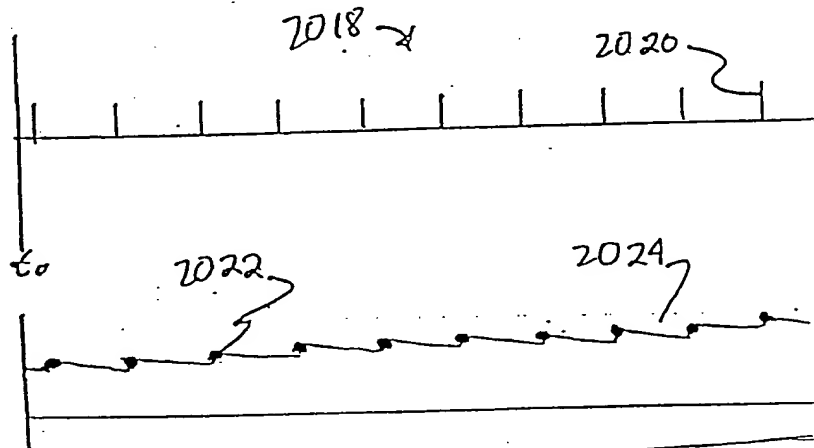
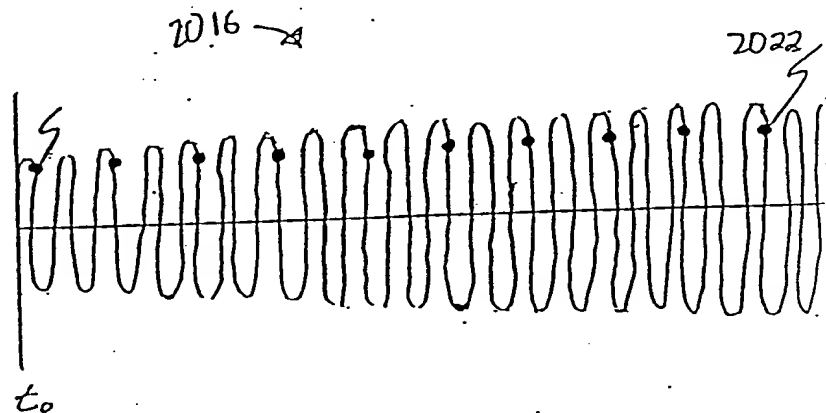
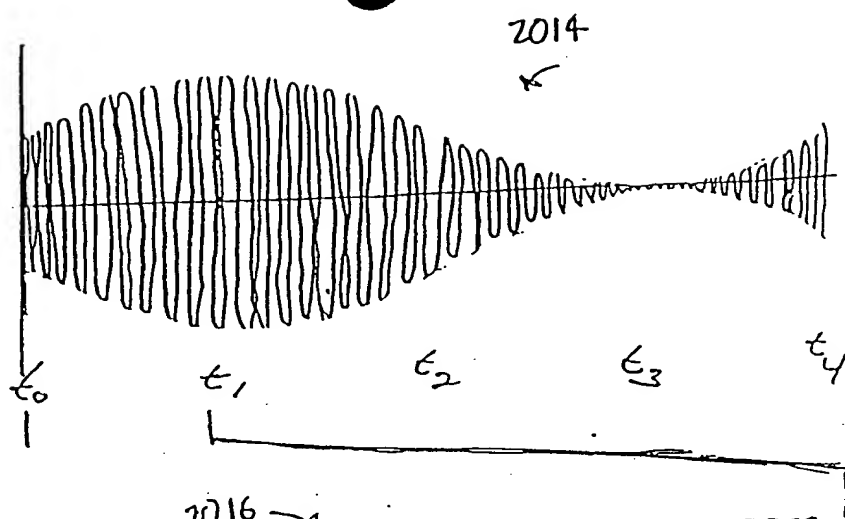


FIG. 20A







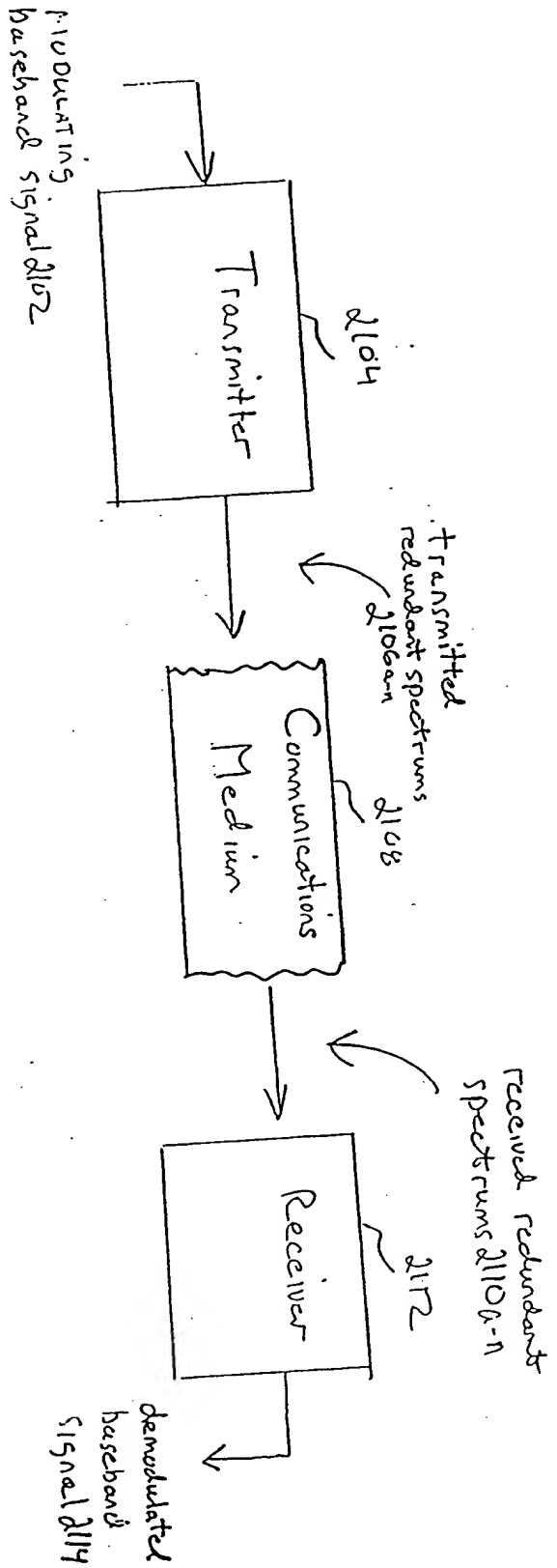


Fig. 21















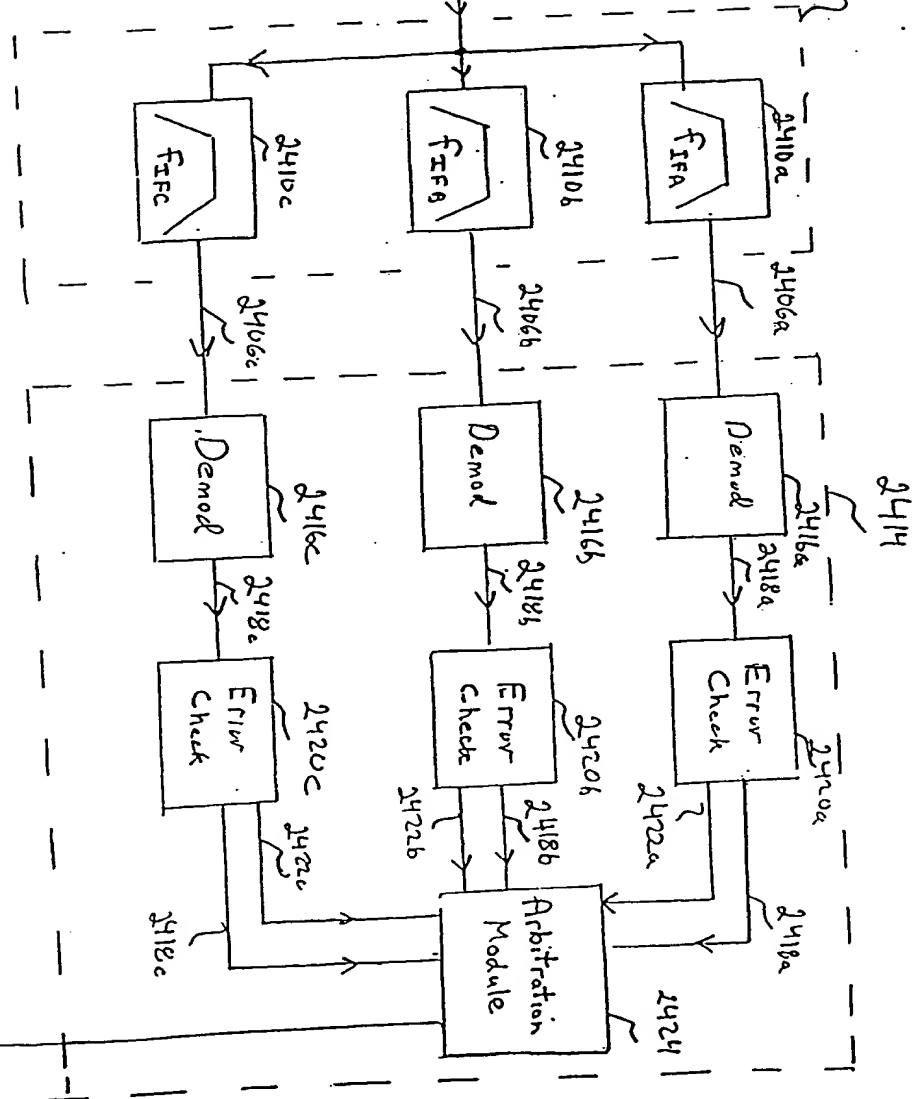
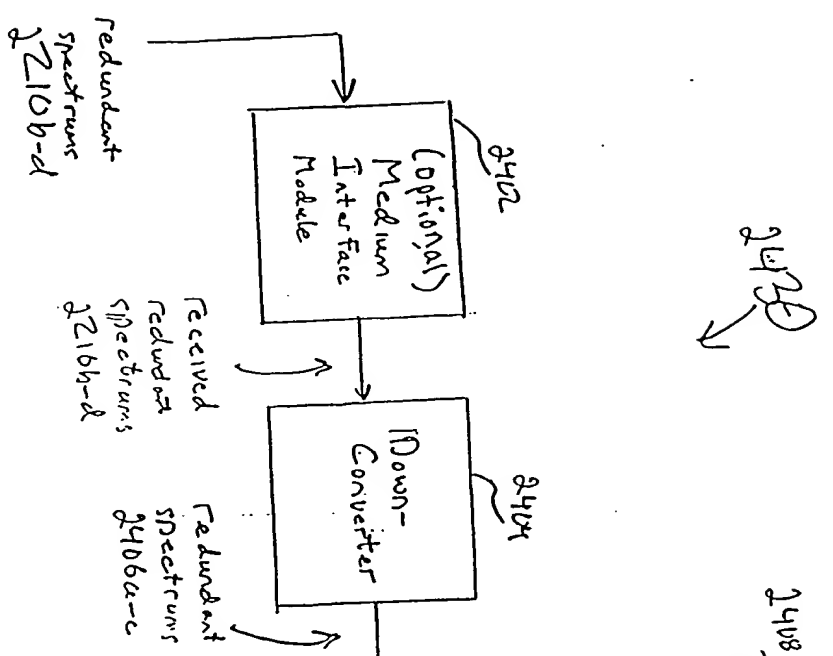
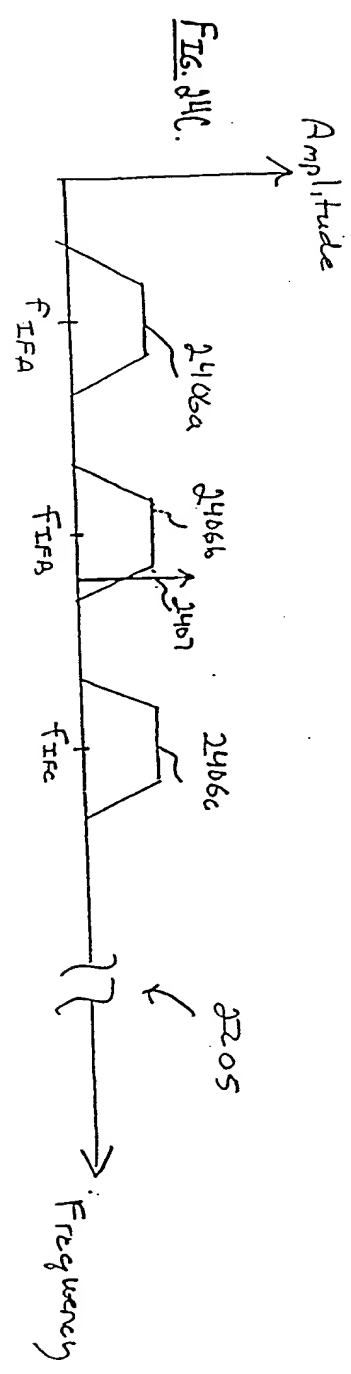
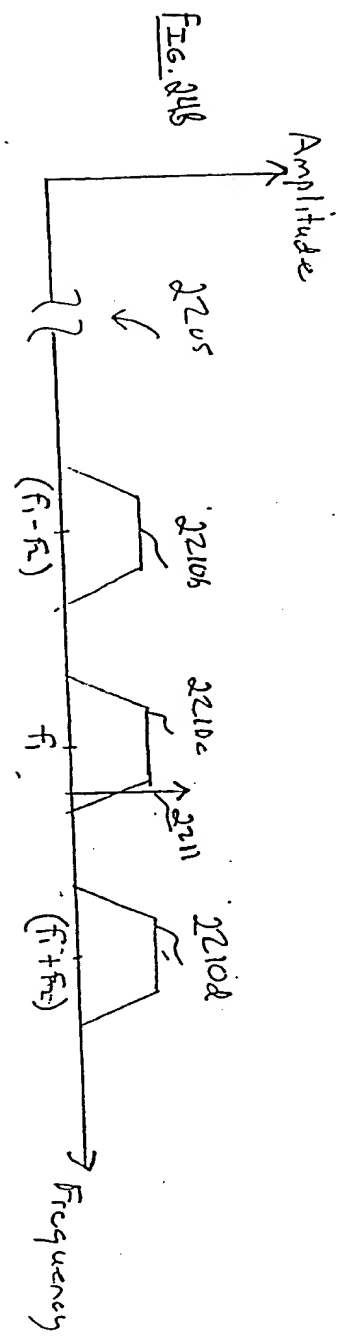


FIG. 24A

FIG. 24A



1115-1-A-000000

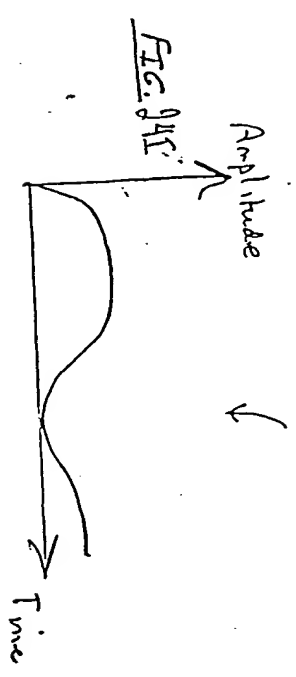
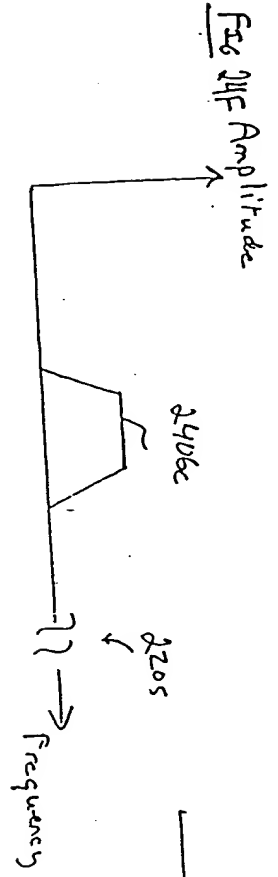
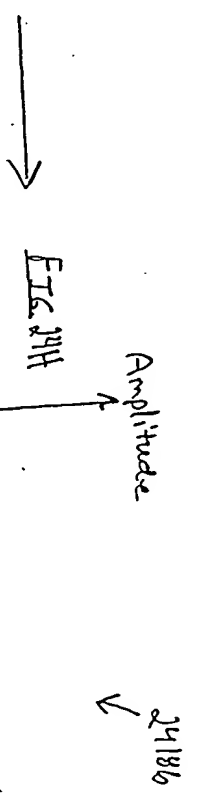
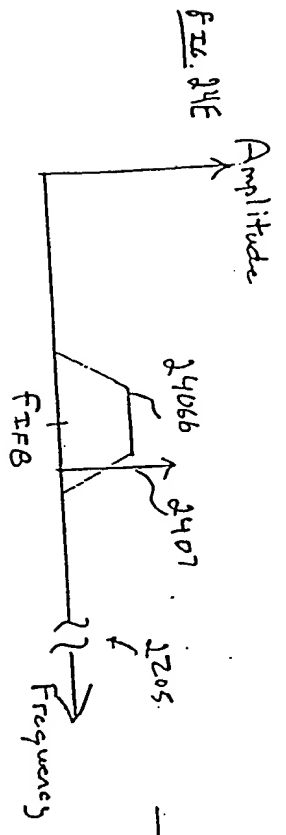
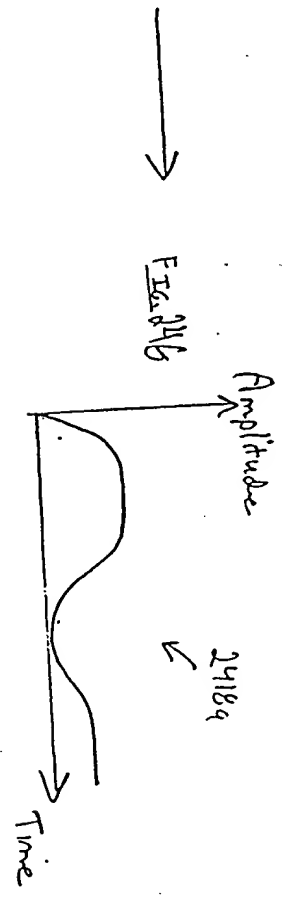
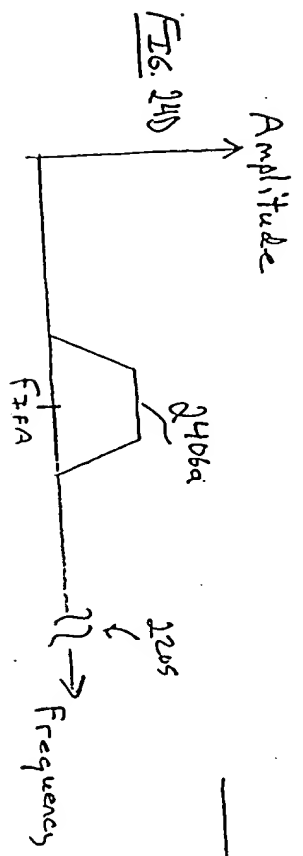
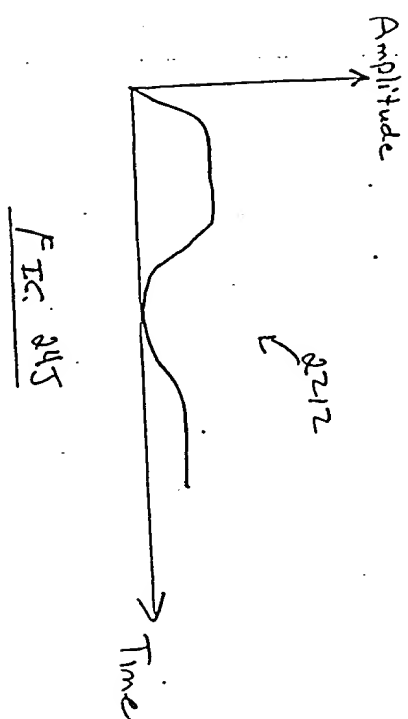


FIG. 24D

W



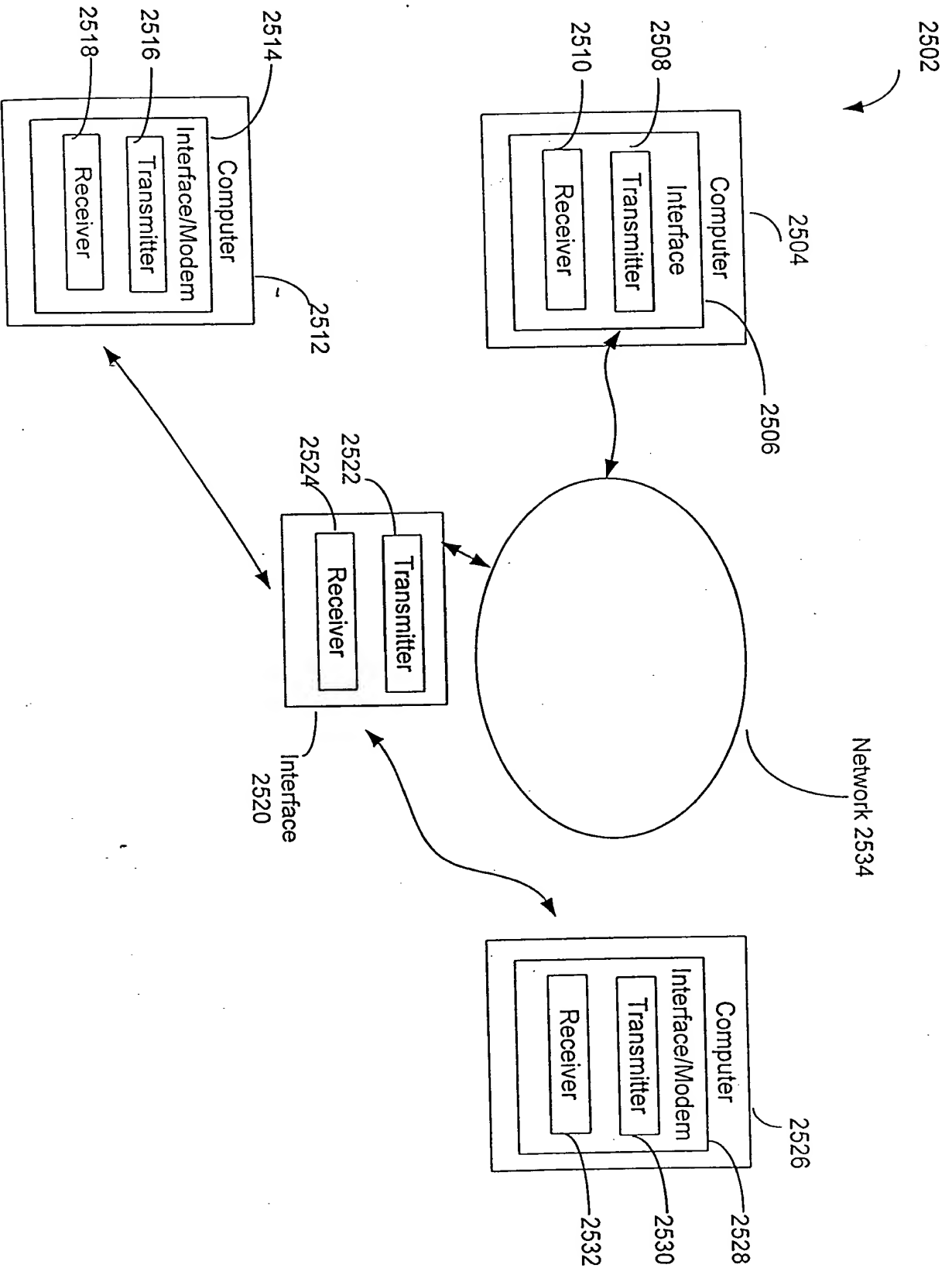


FIG. 25

2606

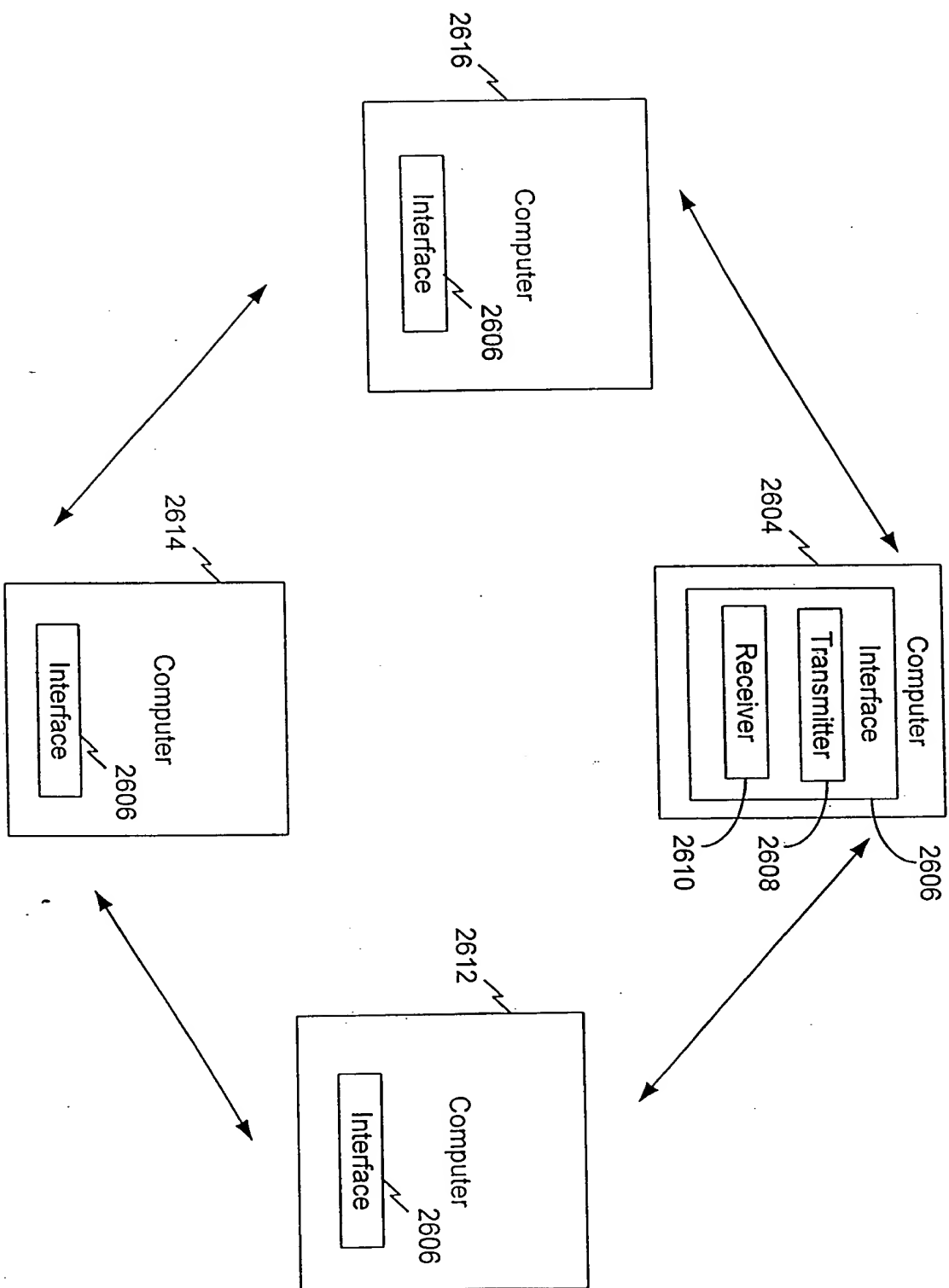


FIG. 26

FIG. 26

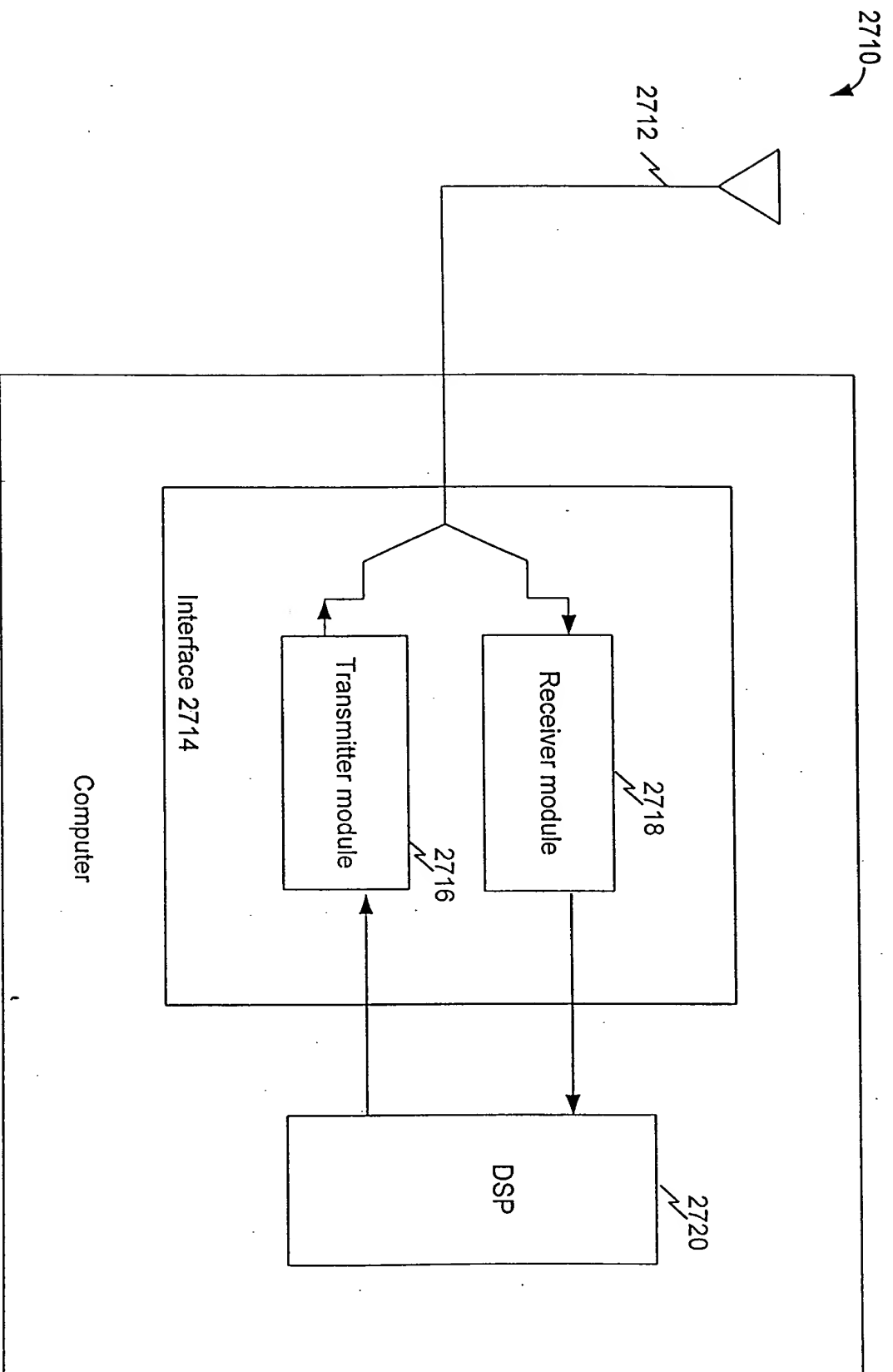


FIG. 27

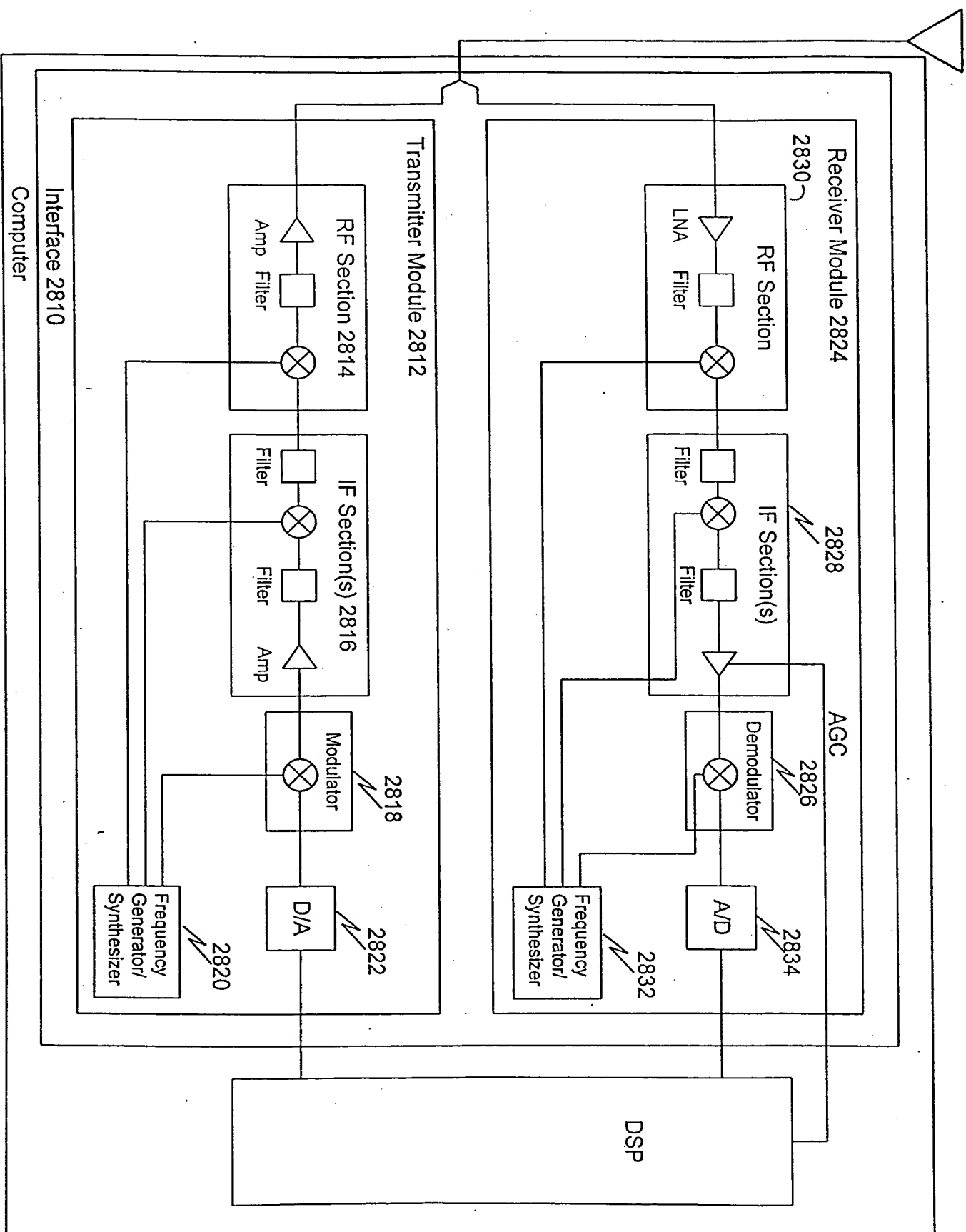


FIG. 28

Heterodyne Implementation



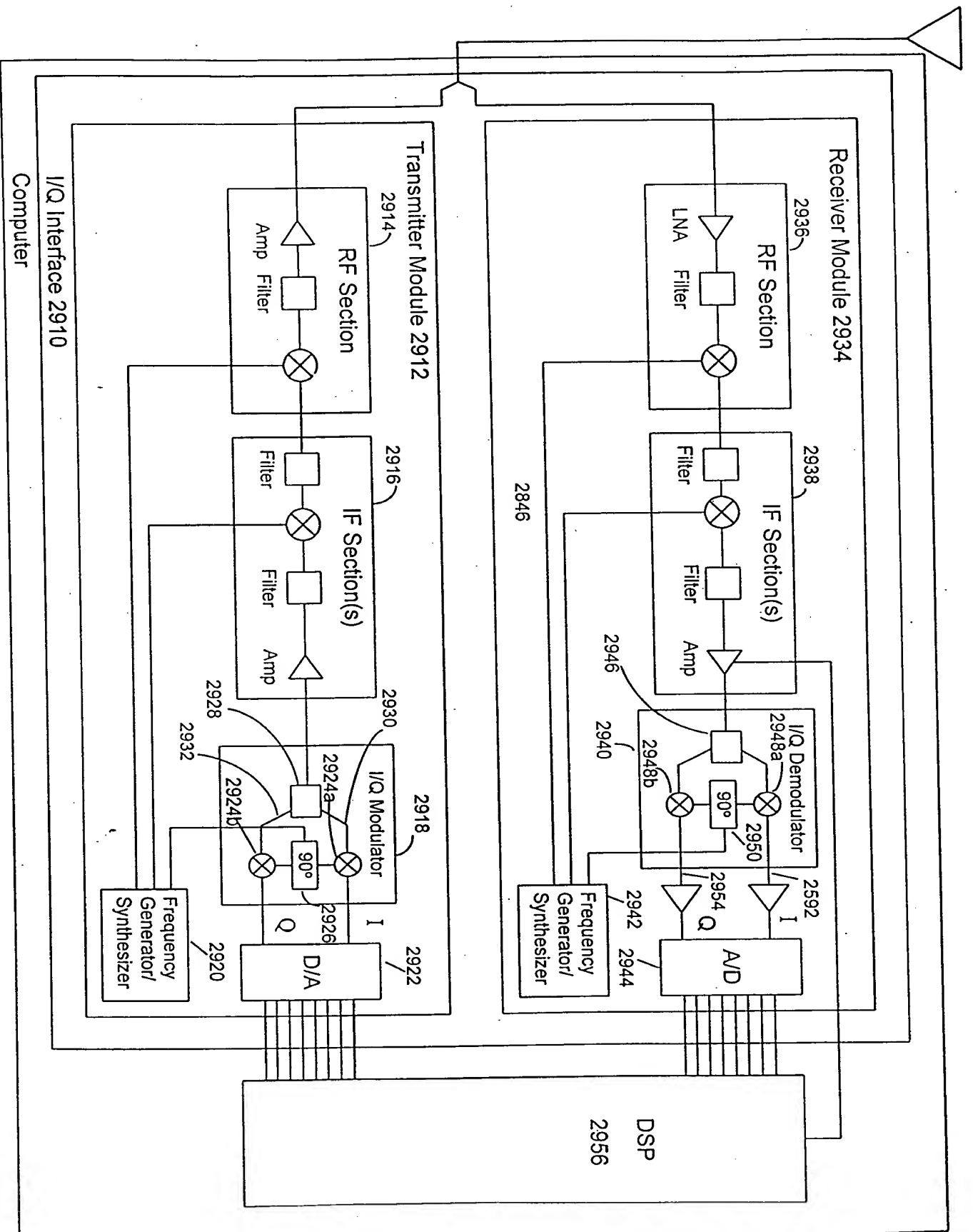
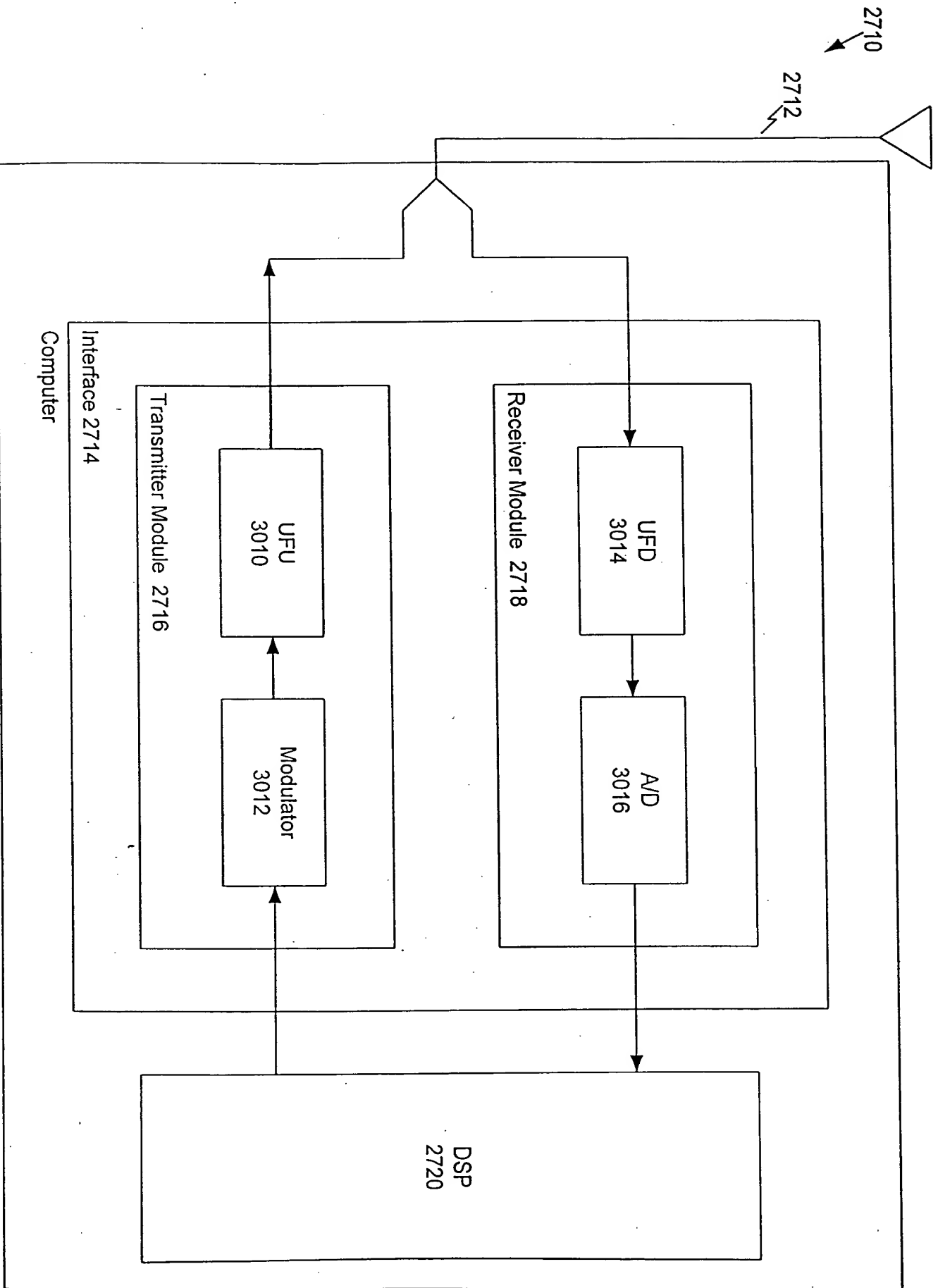


FIG. 29



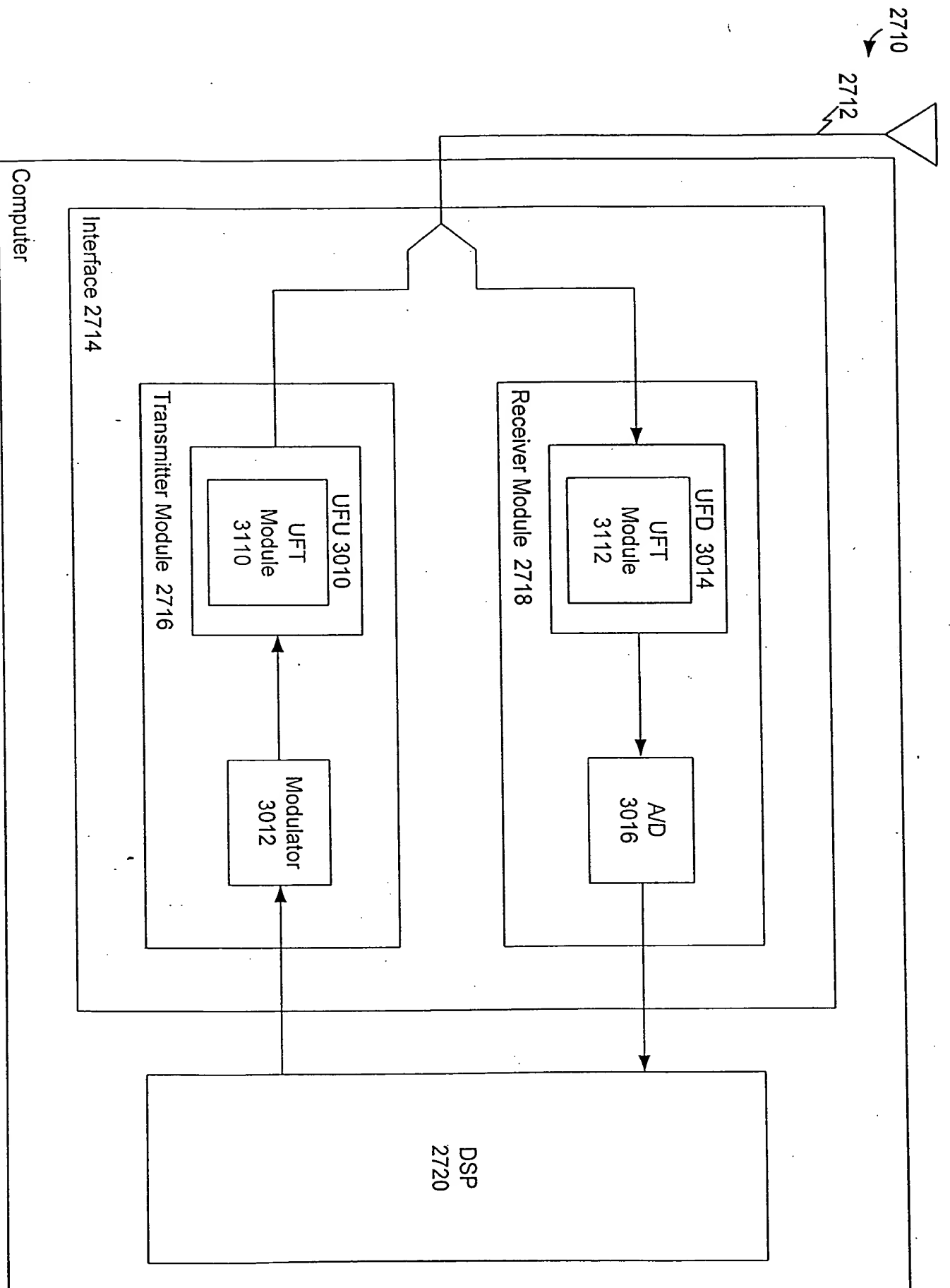


FIG. 31

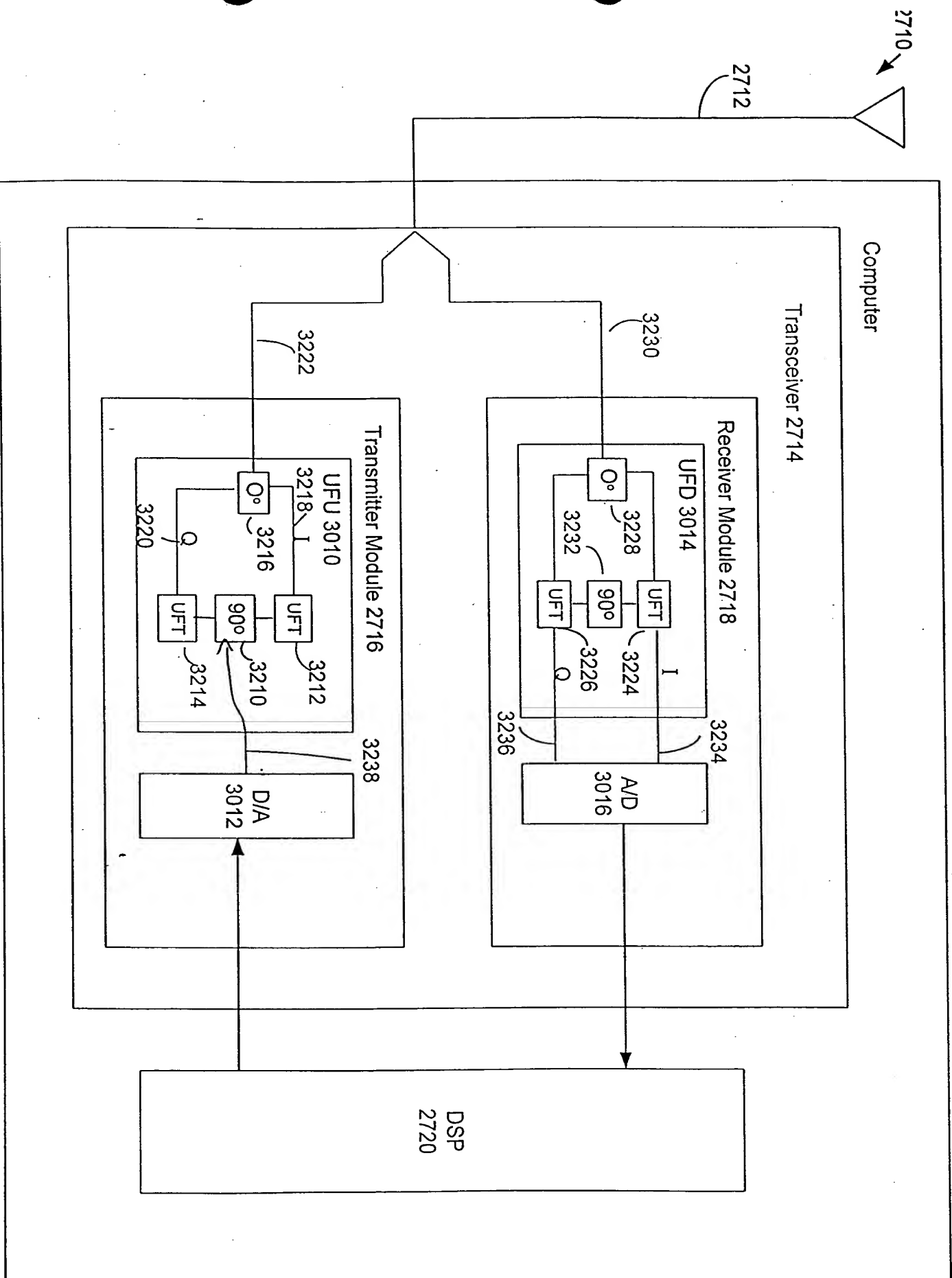


FIG. 32

FIG. 32 is a block diagram of a transceiver system.

3302

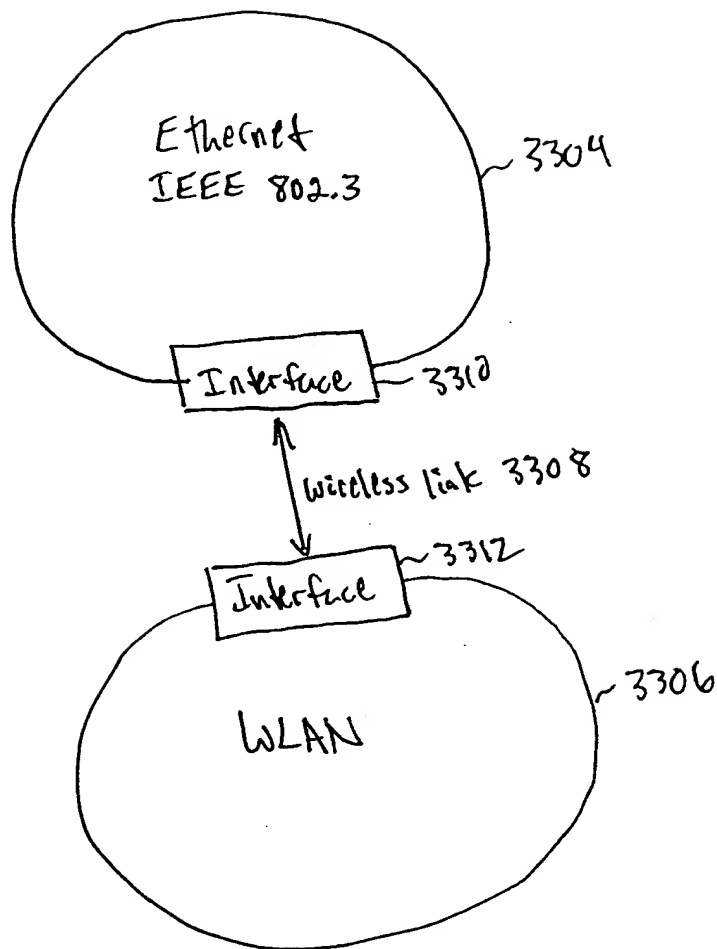


FIG. 33

3402  
↓

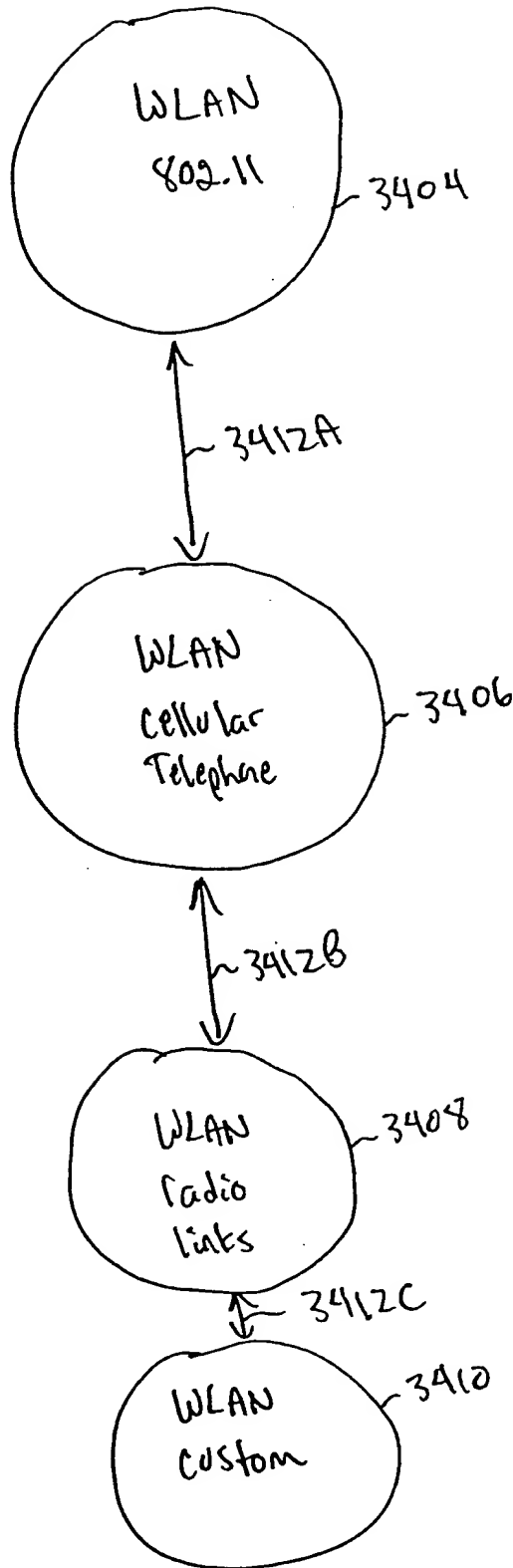
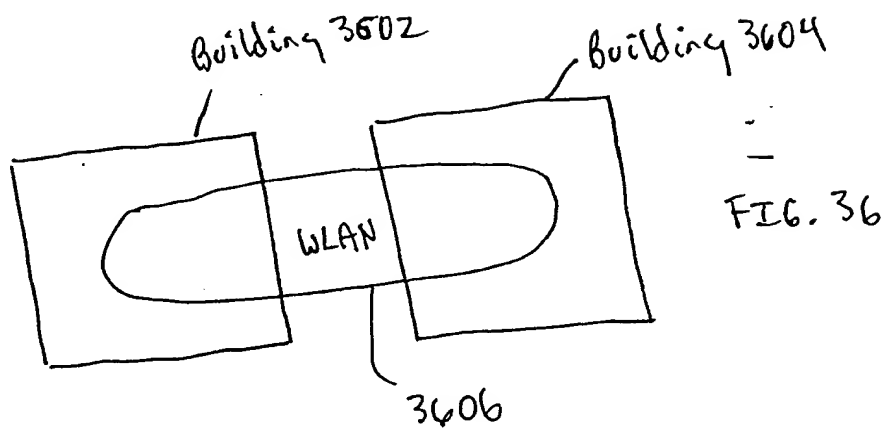
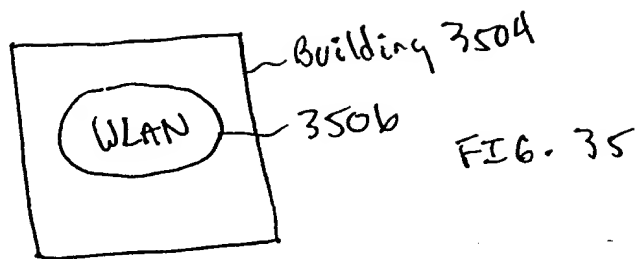


FIG. 34

3502



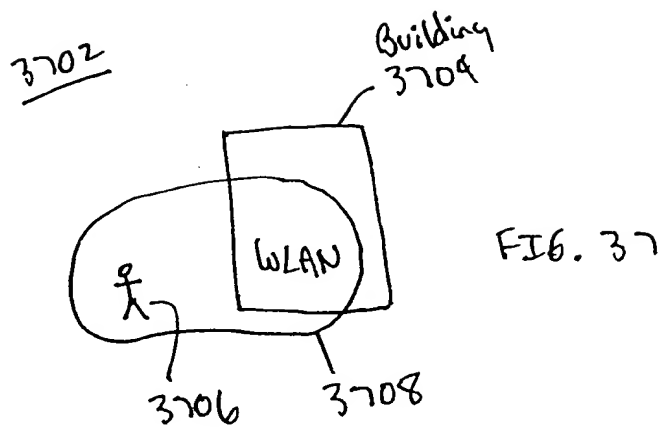


FIG. 38







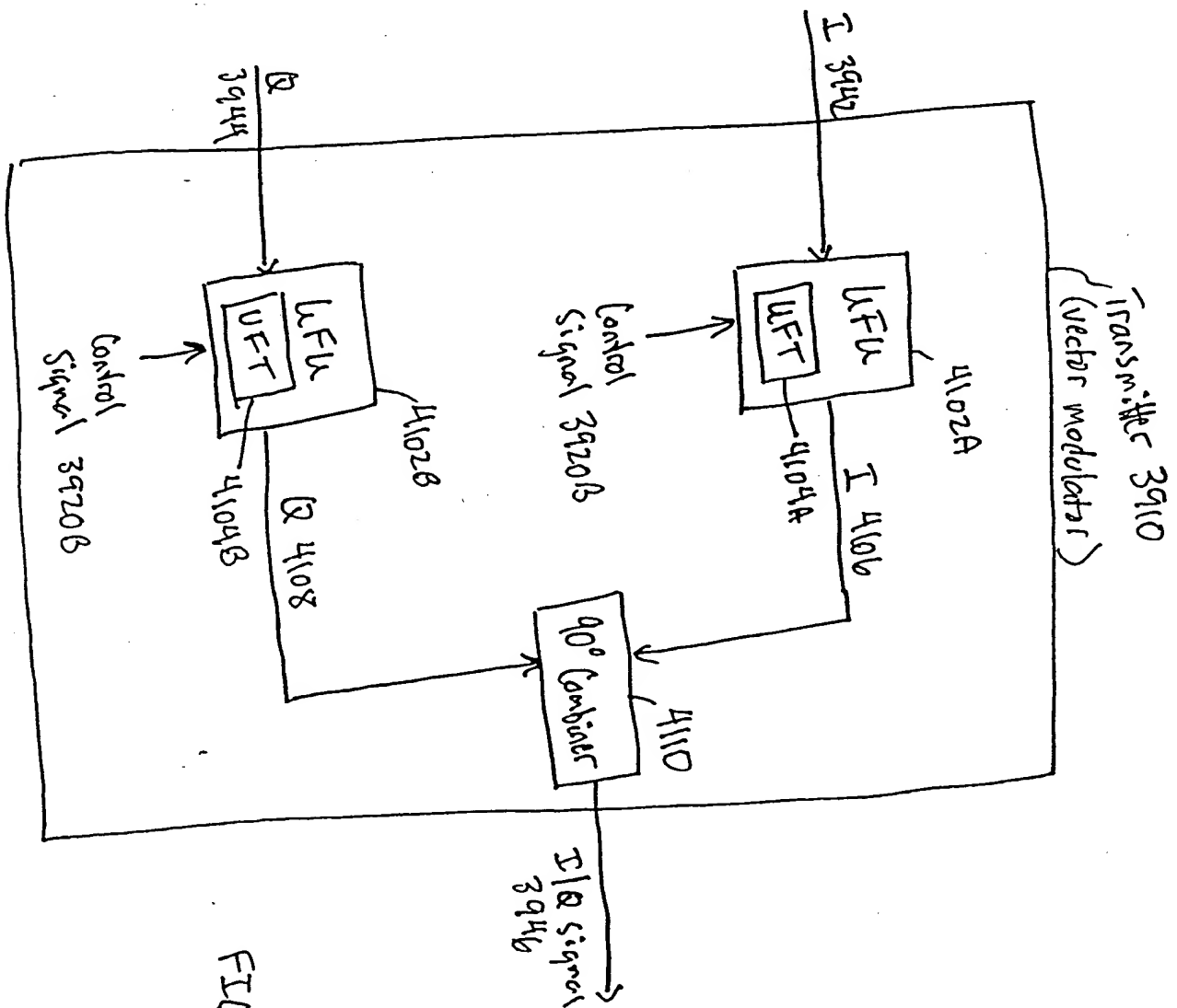
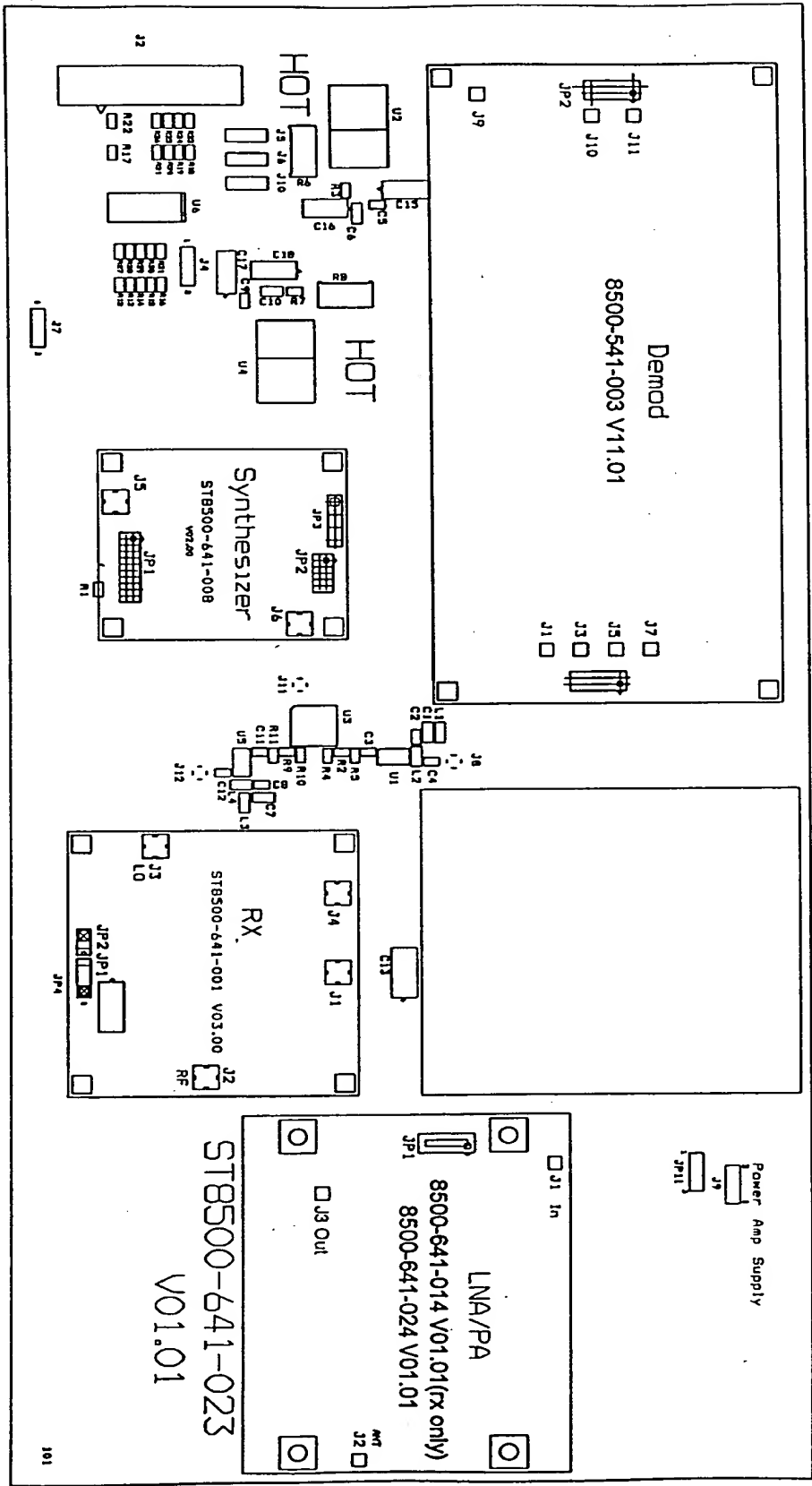


FIG. 41



4302

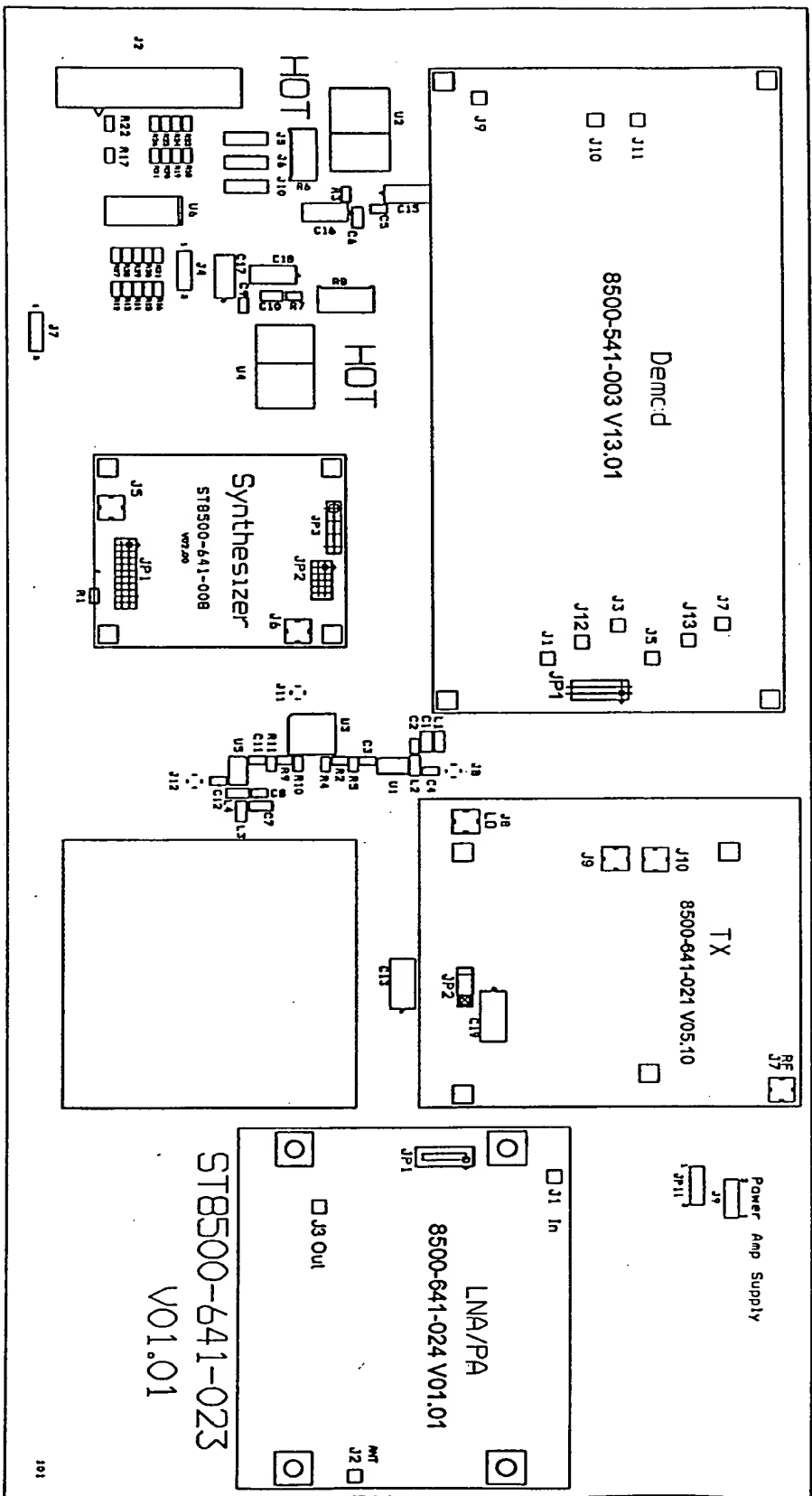


Receive Only

FIG. 43

Copyright 1994 by ST8500-641-001 V03.00

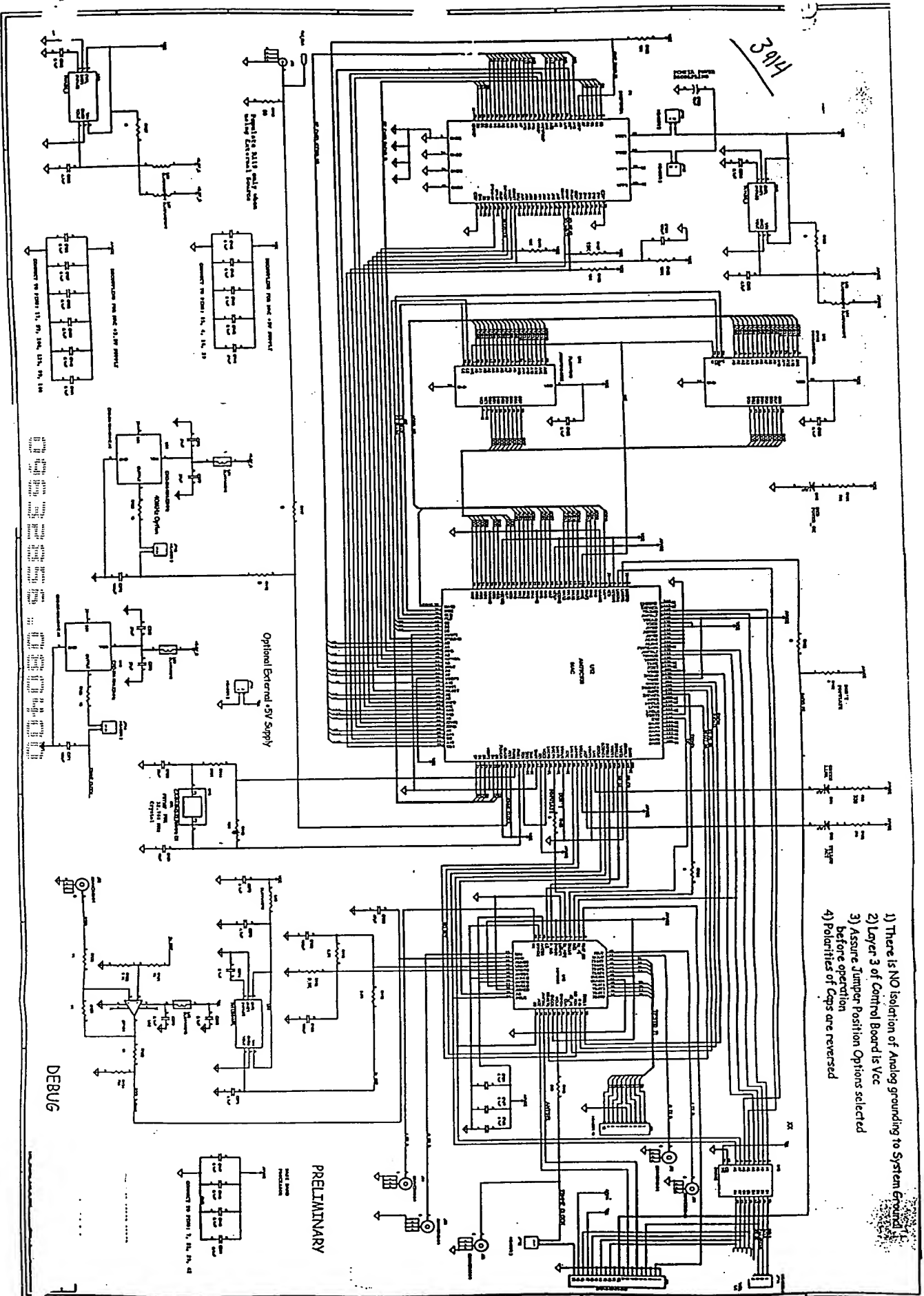
4402



Transmit Only

FIG. 44

Fig. 45



# PARK VISION PCMCIA CONTROLLER BOM

Item	Quantity	Reference	Part Description	Part Number	Manufacturer
1	1	C123	Part Description 10uF CAP 6032, Tantalum,20%	TAJT106K010R	Kemet
2	3	C263, C273, C276, C282	4.7uF CAP 6032,Tantalum,20%	T491A475M006AS	Kemet
3	25	C120, C125, C126, C127, C128, C136, C137, C138, C139, C140, C141, C142, C143, C144, C145, C147, C148, C149, C264, C272, C274, C279, C280, C281, C283	0.1uF CAP 0603,X7R,10%	GRM39X7R104K050AD	Murata
4	3	C146, C269, C276	.01uF CAP 0603,X7R,10%	GRM39X7R103K050AD	Murata
5	5	C124, C132, C133, C271, C278	100pF CAP 0603,X7R,10%	GRM39COG101K050AD	Murata
6	1	C129	47pF CAP 0603,X7R,10%	GRM39COG470J100AD	Murata
7	2	C270, C277	27pF CAP 0603,X7R,10%	GRM39COG270K050AD	Murata
8	1	C130	22pF CAP 0603,X7R,10%	GRM39COG220K050AD	Murata
9	1	C131	10pF CAP 0603,X7R,10%	GRM39COG100D050AD	Murata
10	1	DS1	LED, Green	597-3311-420	Dialight
11	1	DS2	LED Yellow	597-3401-420	Dialight
12	1	DS3	LED Red	597-3111-420	Dialight
13	6	JP12, JP13, JP14, JP15, JP16, JP17	Connector HEADER 2Pin	2MS-19-33-01	Specialty Electronics
14	1	JP11	Connector HEADER 4Pin	100VH/TM1SC/W.100/4	BLKCON
15	7	J16, J20, J21, J22, J23, J24, J25	Connector 82MMCX	82MMCX-50-0-1	Huber/Shuner
16	1	J18	Connector Header10	TMS-110-01-G-S	samtec
17	1	J19	Connector with Ejector	EHT-1-10-01-S-D	samtec
18	1	P1	Connector 34X2PCMCIA	DICMJ-68S-SPC-M08	ITT Canon
19	7	L59, L60, L61, L63, L64, L65, L66	Fertile Bead	BLM11A121S	Murata
20	1	R112	10M, Resistor, 0603, 5%	ERJ-3GSYJ394V'	Panasonic
21	1	R114	390K, Resistor, 0603, 5%	ERJ-3GSYJ104V	Panasonic
22	1	R105	100K, Resistor, 0603, 5%	ERJ-3GSYJ153V	Panasonic
23	1	R106, R107, R108, R111	15K, Resistor, 0603, 5%	ERJ-3GSYJ912V	Panasonic
24	4	R116	9.1K, Resistor, 0603, 5%	ERJ-3GSYJ822V	Panasonic
25	1	R115	8.2K, Resistor, 0603, 5%	ERJ-3GSYJ392V	Panasonic
26	1	R113	3.9K, Resistor, 0603, 5%	ERJ-3GSYJ751V	Panasonic
27	1	R101	750, Resistor, 0603, 5%	ERJ-3GSYJ561V	Panasonic
28	1	R110	560, Resistor, 0603, 5%	ERJ-3GSYJ331V	Panasonic
29	2	R99, R100	100K, Resistor, 0603, 5%	ERJ-3GSYJ331V	Panasonic
30	2		100K, Resistor, 0603, 5%	ERJ-3GSYJ331V	Panasonic

FI 6.46A



31	1	R119	50, Resistor, 0603, f	ERJ-3GSYJ500V	Panasonic
32	2	R128, R129	10, Resistor, 0603, 5%	ERJ-3GSYJ100V	Panasonic
33	8	R102, R103, R104, R109, R117, R118, R120, R127	0, Resistor, 0603, 5%	RM732Z1J000ZT	ERJ-KOA
34	6	R121, R122, R123, R124, R125, R126	TBD, Resistor, 0603, 5%	3GSYJ000V	Panasonic
35	1	U10	SRAM	R	Panasonic
36	1	U12	MAC	KM62256DLTG-5L	Samsung
37	1	U13	Baseband Processor	M5M5256CVP-55LL	Mitsubishi
38	1	U14	FLASH RAM	AM79C930	AMD
39	1	U15	32 KHz Crystal	HFA3842 A1	Harris
40	2	U45	Bus Buffer	AM29F010-55EC	AMD
41	1	U48	Regulator 3.5 V	CX-6V-SM2-32.768KHz C/I	Statek
42	1	U49	22MHz Oscillator	DS3862	National
43	1	U50	2 Volt Reference	TK11235BMC	TOKO
44	1	U51	40MHz Oscillator	FOX F3346-22MHz	FOX
				TK11220BMC	TOKO
				CXO-M-10N-40MHz A/I	Statek

FIG. 46B

3912

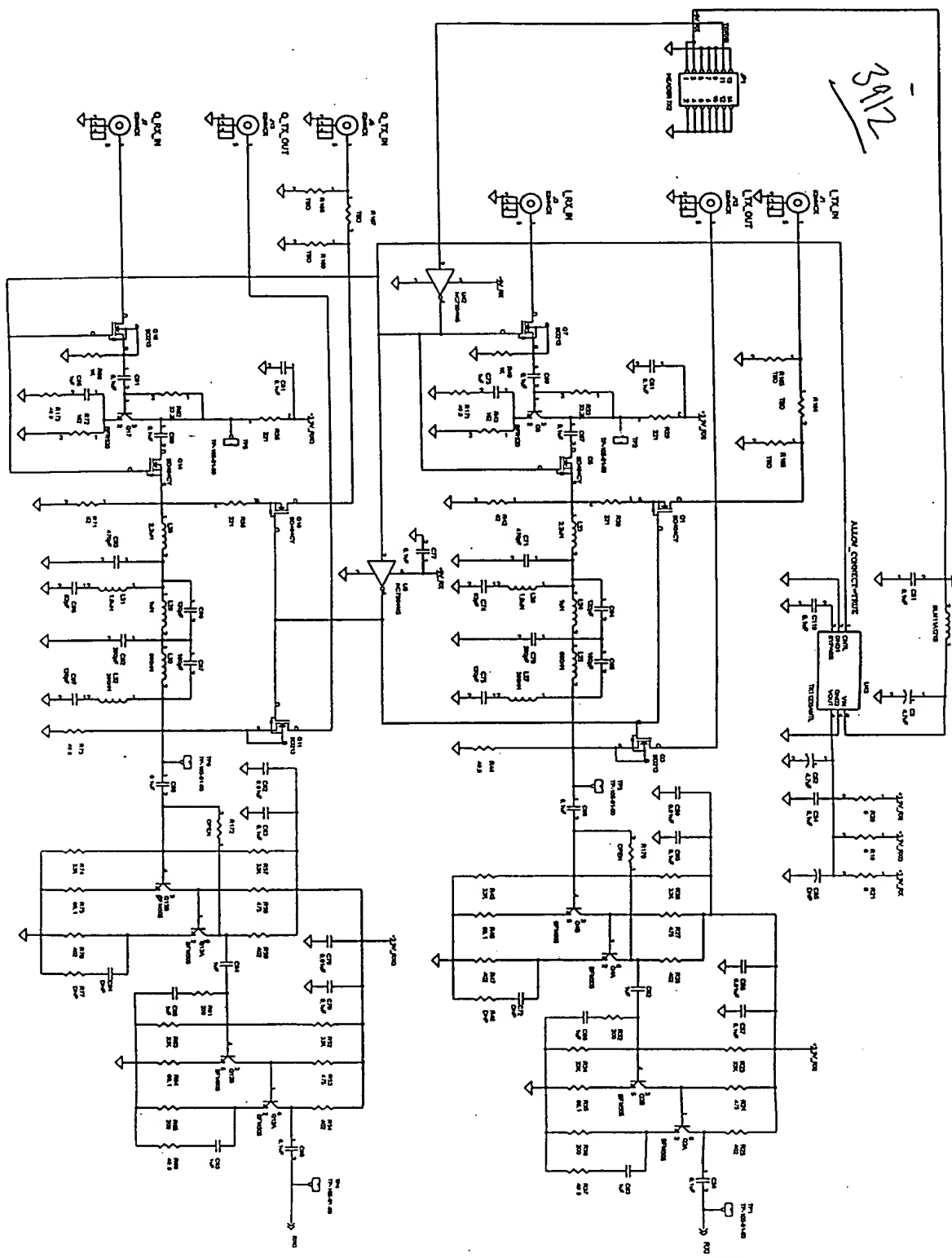


FIG. 47

[illegible]



Item	Quantity	Reference	Part	Part Number	Manufacturer
1	4	C3,C52,C108,C110	4.7uF	T491A475K006AS	KEMET
2	26	C51,C54,C57,C58,C60,C61, C67,C68,C69,C77,C79,C80, C81,C83,C89,C90,C91,C111, C112,C113,C114,C115,C116, C117,C118,C119	0.1uF	GRM39Y5V104Z016	Murata
3	1	C55	DNP	T491A475K006AS	KEMET
4	8	C56,C59,C78,C82,C99,C101, C103,C104	0.01uF	GRM39X7R103K050	Murata
5	8	C62,C63,C66,C73,C84,C85, C88,C95	1uF	GRM40Y5V105Z016	Murata
6	4	C64,C75,C86,C97	120pF	GRM39COG121J050	Murata
7	2	C65,C87	180pF	GRM39COG181J050	Murata
8	2	C70,C92	390pF	GRM39COG391J050	Murata
9	2	C71,C93	470pF	GRM39COG471J050	Murata
10	2	C72,C94	DNP	GRM40Y5V105Z016	Murata
11	2	C74,C96	82pF	GRM39COG820J050	Murata
12	2	C100,C106	DNP	DNP	Murata
13	2	C105,C102	1000pF	GRM39COG102K050	Murata
14	2	D3,D1	BAW56WT1	BAW56WT1	Motorola
15	2	D4,D2	BAV70LT1	BAV70LT1	Motorola
16	1	JP1	HEADER 7X2	FTSH-107-02-L-D	Samtec
17	9	J1,J3,J5,J7,J9,J10,J11, J12,J13	82MMCX	82MMCX-50-0-1	Suhner
18	1	L1	BLM11A121S	BLM11A121S	Murata
19	2	L23,L28	2.2uH	LQG21N2R2K10	Murata
20	2	L29,L24	1uH	LQG21N1R0K10	Murata
21	2	L30,L25	680nH	LQG21NR68K10	Murata
22	2	L26,L31	1.8uH	LQG21N1R8K10	Murata
23	2	L32,L27	390nH	LQG21NR39K10	Murata
24	4	Q1,Q5,Q10,Q14	SD404CY	SD404CY	Calogic
25	4	Q2,Q4,Q12,Q13	BFM505	BFM505	Philips
26	4	Q3,Q7,Q11,Q16	SD213	SD213	Calogic
27	2	Q17,Q8	BFR520	BFR520	Philips
28	4	R19,R20,R21,R83	0	ERJ3GSY0R00	Panasonic
29	8	R23,R26,R34,R45,R52,R57, R63,R74	33K	ERJ3GSYJ333	Panasonic
30	4	R24,R27,R53,R58	475	ERJ3EKF4750	Panasonic
31	6	R25,R28,R47,R54,R59,R76	402	ERJ3EKF4020	Panasonic
32	4	R29,R30,R55,R56	221	ERJ3EKF2210	Panasonic
33	2	R32,R61	200	ERJ3GSYJ201	Panasonic
34	2	R33,R62	33.2K	ERJ3GSYJ333	Panasonic
	4	R35,R46,R64,R75	68.1	ERJ3EKF68R1	Panasonic

FIG. 49A

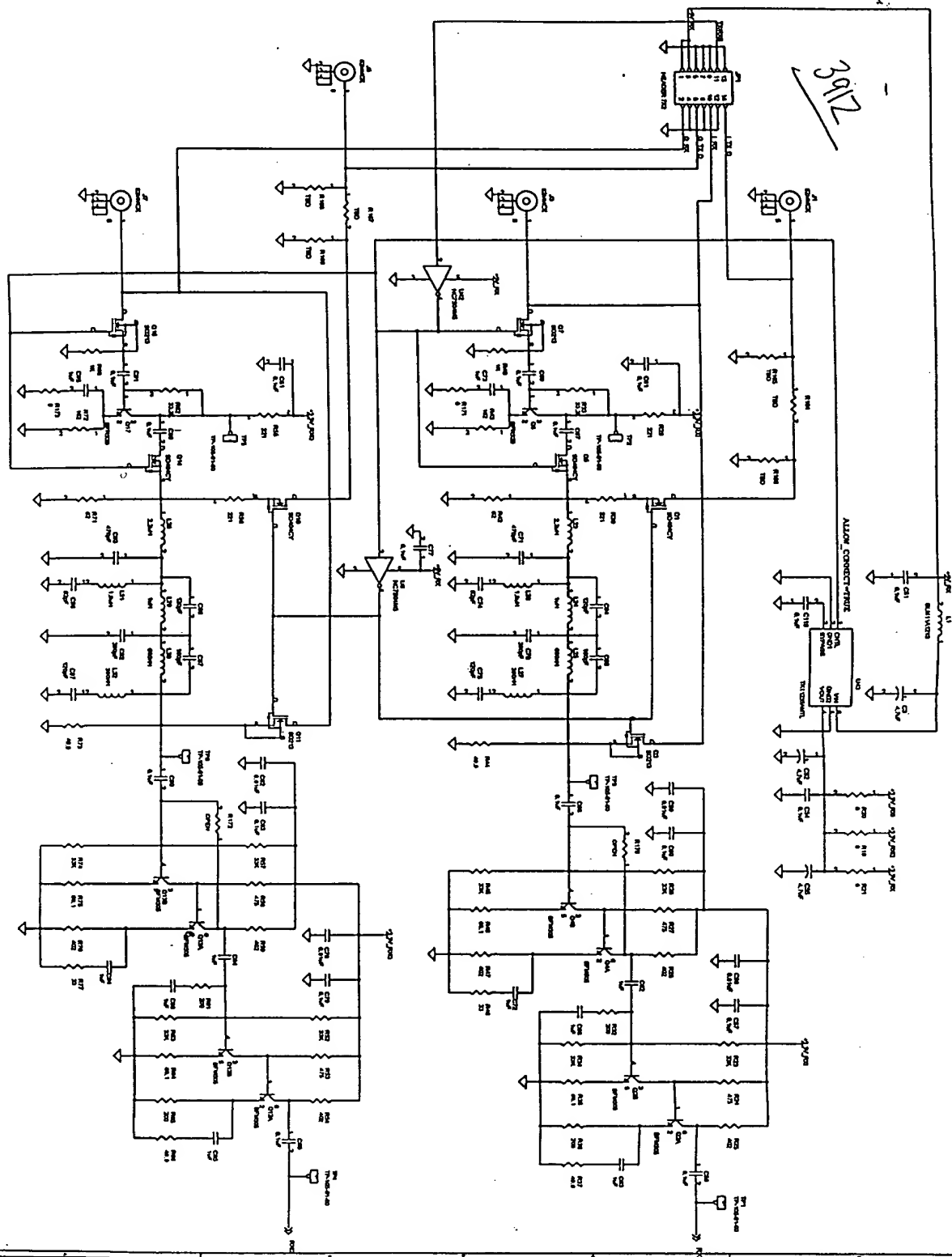
36	2	R36,R65	200	ERJ3EKF2000	Panasonic
7	6	R37,R44,R66,R73,R171, R173	49.9	ERJ3EKF49R9	Panasonic
38	6	R40,R68,R78,R79,R80,R89	1K	ERJ3EKF1001	Panasonic
39	2	R42,R71	62	ERJ3GSYJ620	Panasonic
40	2	R43,R72	162	ERJ3EKF1620	Panasonic
41	2	R77,R48	DNP	ERJ3GSYJ330	Panasonic
42	4	R81,R82,R85,R87	2K	ERJ3EKF2001	Panasonic
43	1	R84	909	ERJ3EKF9090	Panasonic
44	1	R88	15K	ERJ3EKF1502	Panasonic
45	1	R90	10K	ERJ3EKF1002	Panasonic
46	2	R91,R92	100	ERJ3EKF1000	Panasonic
47	6	R164,R165,R166,R167,R168, R169	TBD		Panasonic
48	2	R170,R172	OPEN		Panasonic
49	6	TP1,TP2,TP3,TP4,TP5,TP6	TP-105-01-00		
50	2	U42,U6	NC7S04M5	NC7S04M5	National Semiconductor
51	1	U7	AD8052AR	AD8052AR	Analog Devices
52	1	U8	AD1582	AD1582	Analog Devices
53	1	U9	AD605AR	AD605AR	Analog Devices
54	1	U43	TK11235AMTL	TK11235BM	Toko

Board

B500.541.003 V13.01

FIG. 49B

FIG. 50





# Bill Of Materials

Item	Quantity	Reference	Part	Part Number	Manufacturer
1	3	C3,C52,C55	4.7uF	T491A475K006AS	KEMET
2	26	C51,C54,C57,C58,C60,C61, C67,C68,C69,C77,C79,C80, C81,C83,C89,C90,C91,C111, C112,C113,C114,C115,C116, C117,C118,C119	0.1uF	GRM39Y5V104Z016	Murata
3	8	C56,C59,C78,C82,C99,C101, C103,C104	0.01uF	GRM39X7R103K050	Murata
4	10	C62,C63,C66,C72,C73,C84, C85,C88,C94,C95	1uF	GRM40Y5V105Z016	Murata
5	4	C64,C75,C86,C97	120pF	GRM39COG121J050	Murata
6	2	C87,C65	180pF	GRM39COG181J050	Murata
7	2	C70,C92	390pF	GRM39COG391J050	Murata
8	2	C71,C93	470pF	GRM39COG471J050	Murata
9	2	C96,C74	82pF	GRM39COG820J050	Murata
10	5	C100,C102,C105,C106,C107	100pF	GRM39COG101K050	Murata
11	1	C108	1uF		
12	1	C110	4.7uF		
13	2	D3,D1	BAW56WT1	BAW56WT1	Motorola
14	2	D4,D2	BAV70LT1	BAV70LT1	Motorola
15	2	JP2,JP1	HEADER 7X2		
16	6	J1,J3,J5,J7,J10,J11	82MMCX	142-0701-231	Johnson
17	1	J9	82MMCX	82MMCX-50-0-1	Suhner
18	1	L1	BLM11A121S	BLM11A121S	Murata
19	2	L28,L23	2.2uH	LQG21N2R2K10	Murata
20	2	L24,L29	1uH	LQG21N1R0K10	Murata
21	2	L30,L25	680nH	LQG21NR68K10	Murata
22	2	L26,L31	1.8uH	LQG21N1R8K10	Murata
23	2	L27,L32	390nH	LQG21NR39K10	Murata
24	4	Q1,Q5,Q10,Q14	SD404CY	SD404CY	Calogic
25	4	Q2,Q4,Q12,Q13	BFM505	BFM505	Philips
26	4	Q3,Q7,Q11,Q16	SD213	SD213	Calogic
27	2	Q17,Q8	BFR520	BFR505	Philips
28	5	R19,R20,R21,R171,R173	0		
29	8	R23,R26,R34,R45,R52,R57, R63,R74	33K	ERJ3GSYJ333	Panasonic
30	4	R24,R27,R53,R58	475	ERJ3EKF4750	Panasonic
31	6	R25,R28,R47,R54,R59,R76	402	ERJ3EKF4020	Panasonic
32	4	R29,R30,R55,R56	221	ERJ3EKF2210	Panasonic
33	2	R32,R61	200	ERJ3GSYJ201	Panasonic
34	2	R33,R62	33.2K	ERJ3GSYJ333	Panasonic
	4	R35,R46,R64,R75	68.1	ERJ3EKF68R1	Panasonic
	2	R36,R65	200	ERJ3EKF2000	Panasonic

FIG. 52A

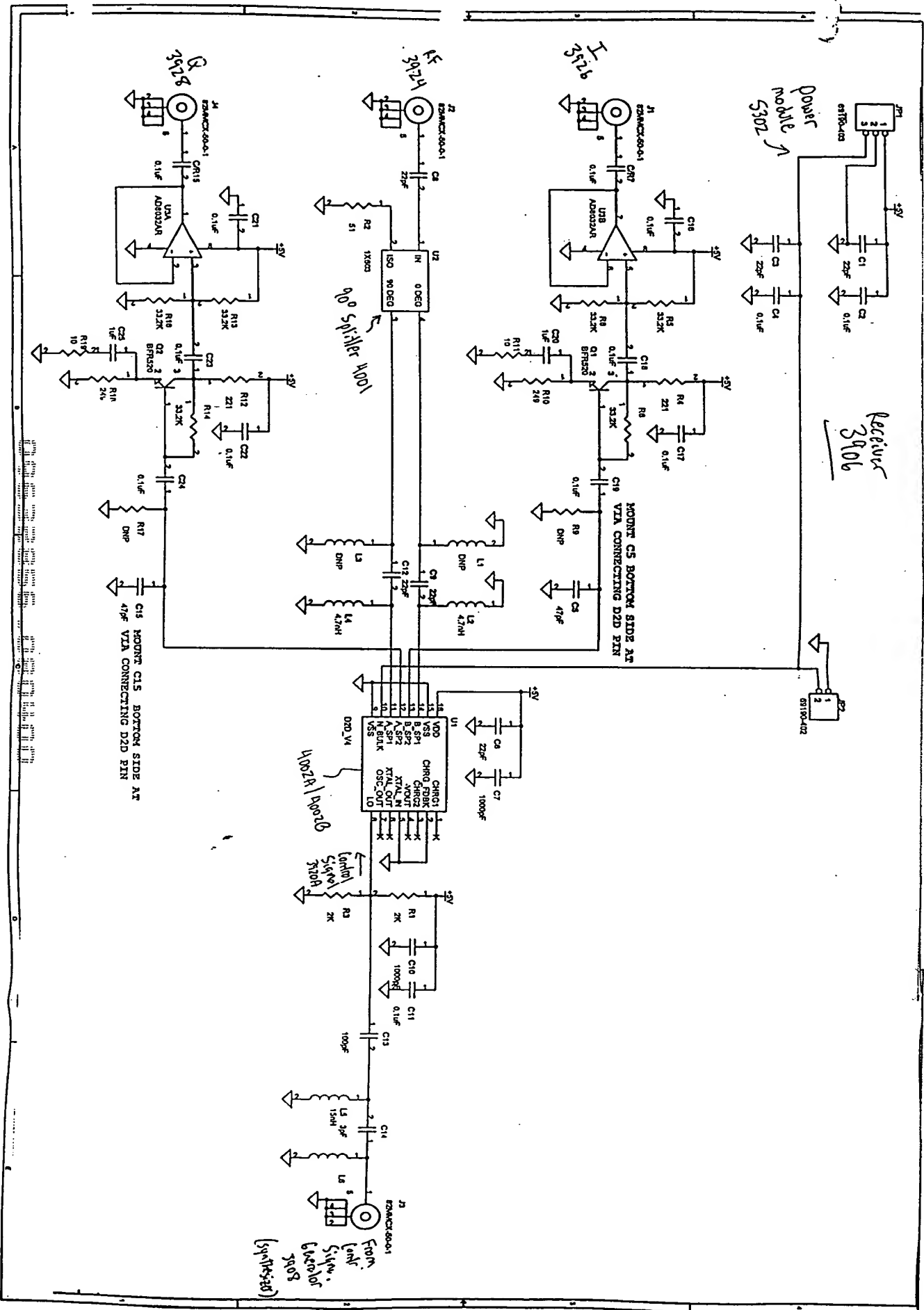


37	2	R66,R37	49.9	ERJ3EKF49R9	Panasonic
8	6	R40,R68,R78,R79,R80,R89	1K	ERJ3EKF1001	Panasonic
39	2	R42,R71	62	ERJ3GSYJ620	Panasonic
40	2	R43,R72	162	ERJ3EKF6810	Panasonic
41	2	R44,R73	49.9	ERJ3EKF1001	Panasonic
42	2	R77,R48	33	ERJ3GSYJ330	Panasonic
43	4	R81,R82,R85,R87	2K	ERJ3EKF2001	Panasonic
44	1	R83	0	ERJGSY0R00	Panasonic
45	1	R84	1.1K	ERJ3EKF2001	Panasonic
46	1	R88	15K	ERJ3EKF1502	Panasonic
47	1	R90	10K	ERJ3EKF1002	Panasonic
48	2	R91,R92	100	ERJ3EKF1000	Panasonic
49	6	R164,R165,R166,R167,R168,	TBD		
		R169			
50	2	R170,R172	OPEN		
51	6	TP1,TP2,TP3,TP4,TP5,TP6	TP-105-01-00		
52	2	U42,U6	NC7S04M5		National Semiconductor
53	1	U7	AD8032AR	AD8032AR	Analog Devices
54	1	U8	AD1582	AD1582	Analog Devices
55	1	U9	AD605AR	AD605AR	Analog Devices
56	1	U43	TK11235AMTL	TK11235AMTL	Toko

FIG. 52B



FIG. 53



Item	Quantity	Reference	Part	Part Number	Manufacturer
1	10	C/R7,C/R15,C16,C17,C18,C19,C21,C22,C23,C24	0.1uF	GRM39Y5V104Z016	Murata
2	6	C1,C3,C6,C8,C9,C12	22pF	GRM39COG220J050	Murata
3	3	C2,C4,C11	0.1uF	GRM39X7R104K016	Murata
4	2	C5,C15	47pF	GRM39COG470J050	Murata
5	2	C10,C7	1000pF	GRM39X7R102K050	Murata
6	1	C13	100pF	GRM39X7R101J050	Murata
7	1	C14	3pF	GRM40COG030B50V	Murata
8	2	C20,C25	1uF	GRM40Y5V105Z016	Murata
9	1	JP1	69190-403	69190-403	BERG
10	1	JP2	69190-402	69190-402	BERG
11	4	J1,J2,J3,J4	82MMCX-50-0-1	82MMCX-50-0-1	Suhner
12	2	L3,L1	DNP	L	TOKO
13	2	L4,L2	4.7nH	LL1608-F4N7K	TOKO
14	1	L5	15nH	LL2012FH15NJ	TOKO
15	1	L6	DNP	DNP	TOKO
16	2	Q1,Q2	BFR520	BFR520	Philips
17	2	R1,R3	2K	ERJ3GSYJ202	Panasonic
18	1	R2	51	ERJ3GSYJ510	Panasonic
19	2	R4,R12	221	ERJ3EKF2210	Panasonic
20	6	R5,R6,R8,R13,R14,R16	33.2K	ERJ3EKF3322	Panasonic
21	2	R9,R17	DNP	ERJ3EKF1001	Panasonic
22	2	R10,R18	249	ERJ3EKF2490	Panasonic
23	2	R11,R19	10	ERJ3GSYJ100	Panasonic
24	1	U1	D2D_V4	D2D_V4	Parker Vision
25	1	U2	1X603	1X603	Anaren
26	1	U3	AD8032AR	AD8032AR	Analog Devices
27	1				

Based 5TB500 LA1.001 V03.00

FIG. 54



Item	Qty	Reference	Part	Description	Part Number	Manufacturer
1	1	CR1	BBY51-E6327	Diode, Varactor	BBY51-E6327	Siemens
2	6	C1,C3,C5,C7,C9,C10	100pF	Capacitor, ceramic, 100pF, 10%, COG, 0603	GRM39COG101K050	Murata
3	2	C29,C2	0.1uF	Capacitor, ceramic, .1uF, 10%, X7R, 0603	GRM39X7R104K016AD	Murata
4	3	C4,C8,C17	.01uF	Capacitor, ceramic, .01uF, 10%, X7R, 0603	GRM39X7R103K050	Murata
5	1	C6	220pF	Capacitor, ceramic, 220pF, 5%, COG, 0603	GRM39COG221J025	Murata
6	1	C11	3.3pF	Capacitor, ceramic, 3.3pF, 5%, COG, 0603	GRM39COG33B100V	Murata
7	1	C12	6.8pF	Capacitor, ceramic, 6.8pF, +/-25pF, COG, 0603	GRM39COG68C100V	Murata
8	4	C13,C35,C36,C37	1000pF	Capacitor, ceramic, 1000pF, 10%, X7R, 0603	GRM39X7R102K016	Murata
9	1	C14	1500pF	Capacitor, ceramic, 1500pF, 10%, X7R, 0603	GRM39X7R152K016	Murata
10	1	C15	12pF	Capacitor, ceramic, 12pF, 5%, COG, 0603	GRM39COG12J050	Murata
11	1	C16	4700pF	Capacitor, ceramic, 4700pF, 10%, 0603	GRM39X7R472K016	Murata
12	2	C20,C18	22pF	Capacitor, ceramic, 22pF, 10%, COG, 0603	GRM36COG220K050	Murata
13	4	C22,C32,C33,C34	DNP	Capacitor, ceramic, ., ., 0603		
14	3	C23,C24,C27	4.7uF	Capacitor, tantalum, 4.7uF, 10%, 3216	T491A475K006AS	Kemet
15	2	R16,C31, R17	0 ohm	Resistor, zero ohm, 0603	ERJ3G5Y0R00	Panasonic
16	1	JP1	FTSH-110-02-F-D	Header, dual row 10x2, .050x.050	FTSH-110-02-F-D	Samtec
17	1	JP2	FTSH-105-02-F-D	Header, dual row 5x2, .050x.050	FTSH-105-02-F-D	Samtec
18	1	JP3	TSW-104-08-T-S	Header, single row 4 pin, .100"	TSW-104-08-T-S	Berg
19	2	J5,J6	82MMCX	RF Connector	82MMCX-50-0-1	Suher
20	1	L1	18nH	Inductor, 18nH, 10%, 0805	0805CS-180XJBC	Coilcraft
21	1	L3	0 Ohm	Zero Ohm Jumper	RM73ZJUT	KOA
22	6	L4,L6,L9,L10,L11,L12	BLM11A121S	Ferrite Bead, 0603	BLM11A121S	Murata
23	1	L14	82nH	Inductor, 82nH, 10%, 0805	LL2012-F82NK	Toko
24	1	Q1	BFR520	Transistor, NPN	BFR520	Philips
25	5	R1,R2,R3,R11,R30	1K	Resistor, 1K, 5%, 0603	ERJ3G5YJ102	Panasonic
26	1	R4	10	Resistor, 10 ohm, 5%, 0603	ERJ3G5YJ1R0	Panasonic
27	1	R8	2K	Resistor, 2K, 5%, 0603	ERJ3G5YJ202	Panasonic
28	2	R9,R17	75	Resistor, 75 ohm, 5%, 0603	ERJ3G5YJ750	Panasonic
29	1	R10	3300	Resistor, 3.3K, 5%, 0603	ERJ3G5YJ332	Panasonic
30	1	R12	13K	Resistor, 13K, 5%, 0603	ERJ3G5YJ133	Panasonic
31	1	R13	1.5K	Resistor, 1.5K, 5%, 0603	ERJ3G5YJ152	Panasonic

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16:56:44

32	1	R14	220	Resistor, 220 ohm, 5%, 0603	ERJ3GSYJ221	Panasonic
33	1	R15	DNP	Resistor, zero ohm, 0603	ERJ3GSY0R00	Panasonic
34	2	R18,R19	DNP	Resistor, 91 ohm, 5%, 0603	ERJ3GSYJ910	Panasonic
35	1	R36	TBD	Resistor, zero ohm, 0603	ERJ3GSY0R00	Panasonic
36	1	R37	DNP	Resistor, ., 0603		Panasonic
37	1	TP1	Test Point			
38	1	U1	PE3282A	IC, Synthesizer	PE3282A	Peregrine
39	1	U2	CXO-3M-10N-40MHz	Xtal Osc, 40MHz	CXO-3M-10N-40MHZ A/I	Sialek
40	1	U4	TK11233AMTL	Voltage Regulator, 3.5V	TK11235BM	Toko
41	1	U5	74125	IC, BUFFER	MC74LCX125DT	Motorola
42	1	U6	UPC1678GV	IC, RF Amplifier	UPC1678GV	NEC

43 1

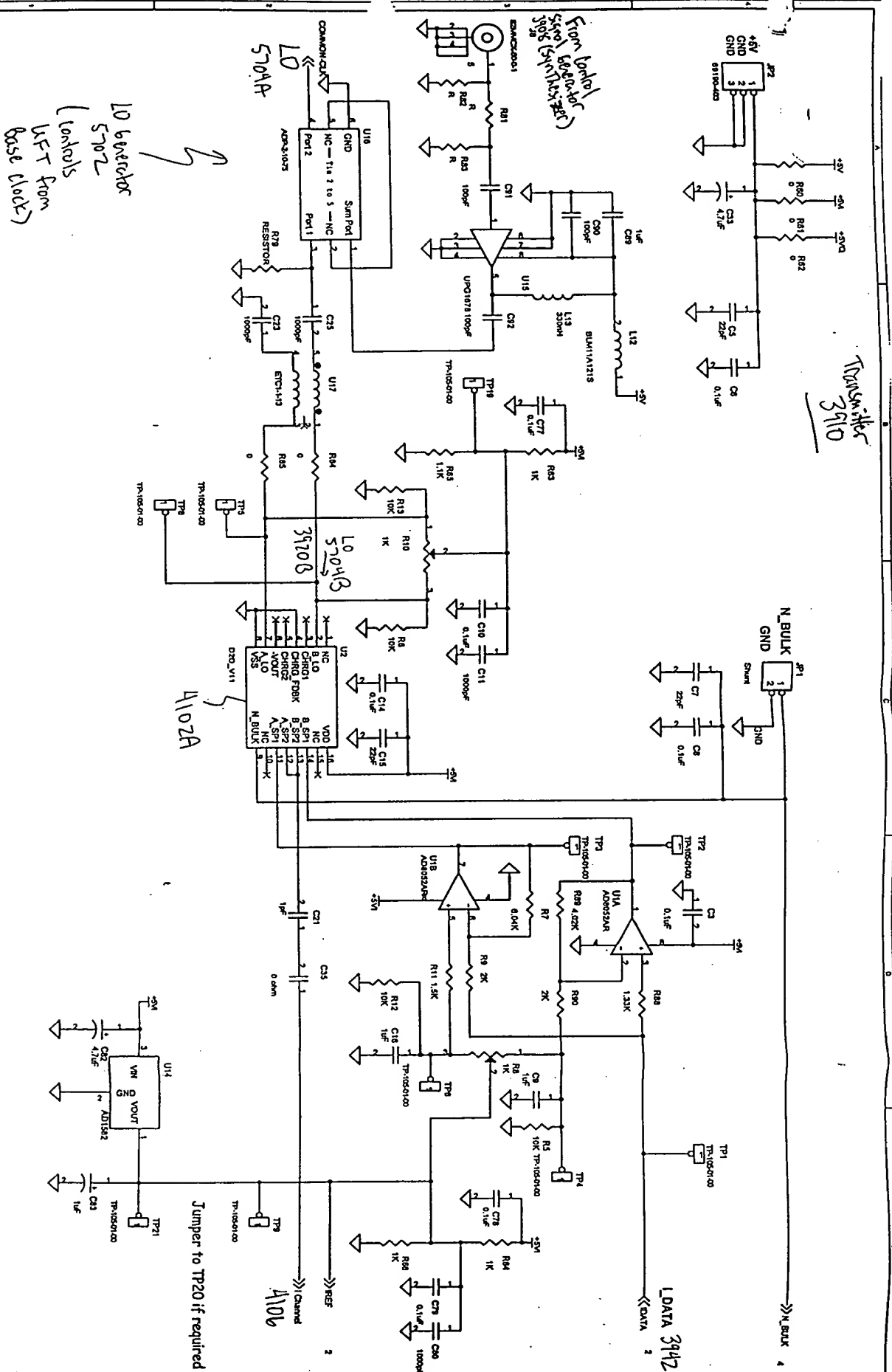
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Barely

Ver.00

FIG. 56B

09632855 : 080400



5704A

5702  
VFT from  
base clock

4102A

4106

Jumper to TP20 if required

Transmitter  
3942

L DATA 3942

N.BULK



Data Conditioning  
Inputs 5902  
(Buffers)

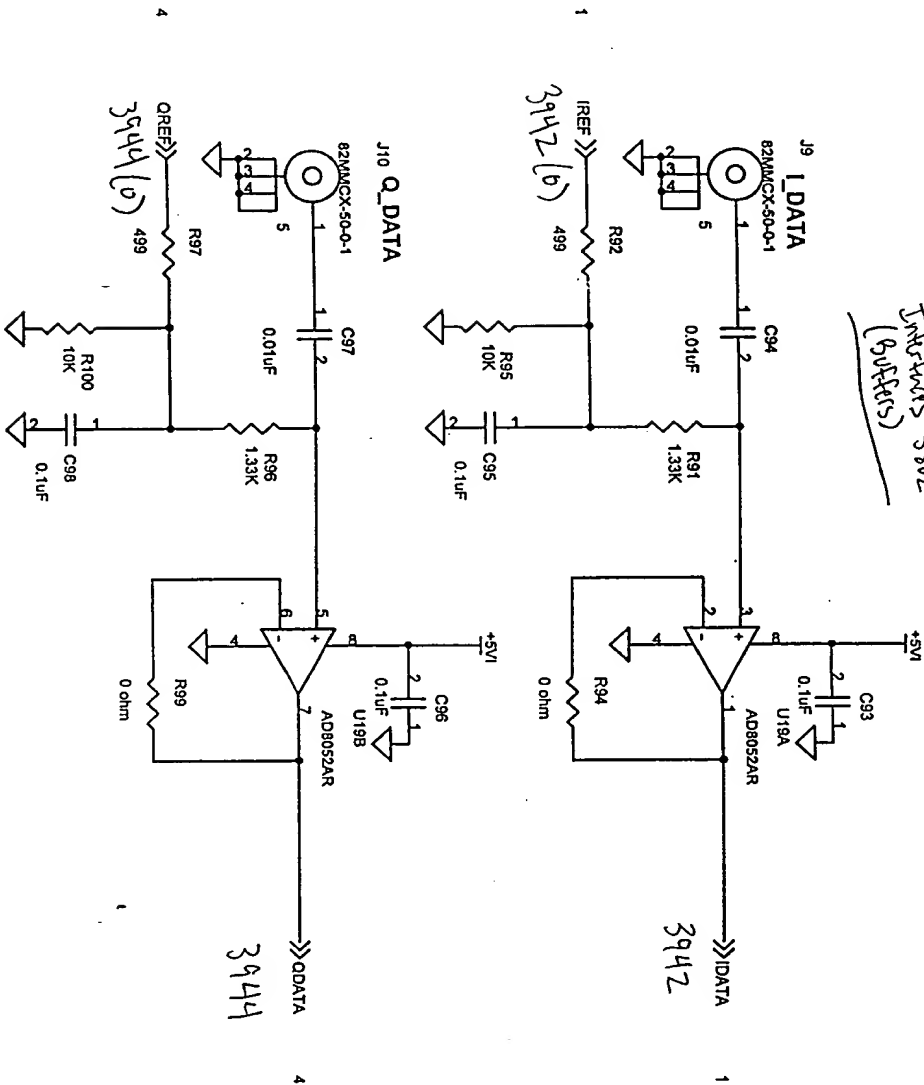


FIG. 8

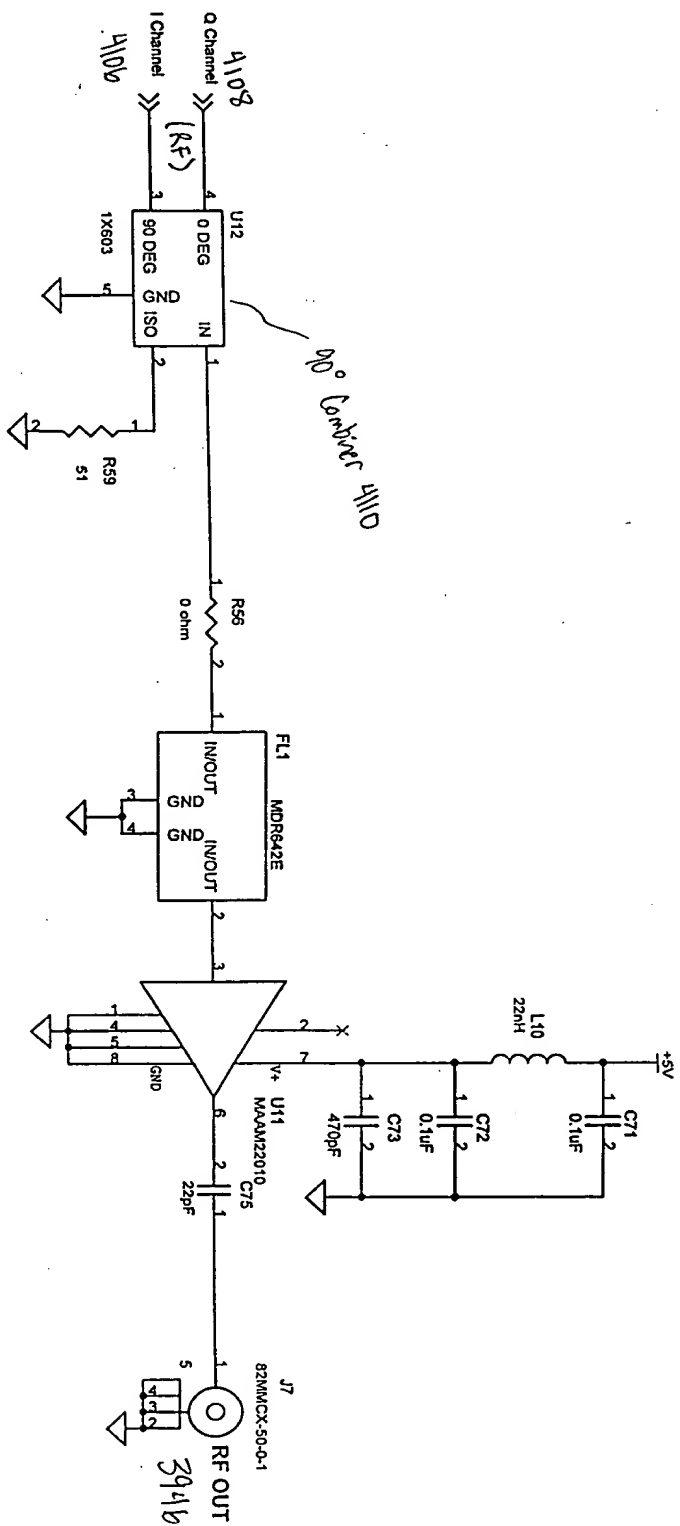
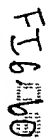


Fig 5A



4108

## Bill Of Materials

Item	Quantity	Reference	Part	Part Number	Manufacturer
1	21	C3,C6,C8,C10,C14,C38,C44, C46,C51,C71,C72,C77,C78, C79,C84,C85,C86,C93,C95, C96,C98	0.1uF	GRM39X7R104K016	Murata
2	6	C5,C7,C15,C43,C52,C75	22pF	GRM39COG220J050	Murata
3	5	C9,C16,C45,C53,C89	1uF	GRM40Y5V105Z016	Murata
4	8	C11,C23,C25,C47,C61,C63, C80,C87	1000pF	GRM39X7R102K050	Murata
5	2	C58,C21	1pF	GRM39COG010B50V	Murata
6	2	C82,C33	4.7uF	T491A475K006AS	KEMET
7	2	C59,C35	0 ohm	GRM39COGxxx50V	Murata
8	1	C73	470pF	GRM39COG471J050	Murata
9	1	C83	1uF	T491A105M016AS	Kemet
10	3	C90,C91,C92	100pF	ECU-V1H101JCV	
11	2	C94,C97	0.01uF	GRM39X7R103K016	Murata
12	1	FL1	MDR642E	MDR642E	Soshin
13	1	JP1	Shunt	69190-402	BERG
14	1	JP2	69190-403	69190-403	BERG
15	4	J7,J8,J9,J10	82MMCX-50-0-1	82MMCX-50-0-1	Suhner
16	1	L10	22nH	LL1608-F22NK	Coilcraft
17	1	L12	BLM11A121S	BLM11A121S	Murata
18	1	L13	330nH	LL2012-FR33K	
19	10	R5,R6,R12,R13,R32,R33, R39,R40,R95,R100	10K	ERJ3EKF1002	Panasonic
20	2	R34,R7	6.04K	ERJ3EKF6041	Panasonic
21	4	R8,R10,R35,R37	1K	3224W-1-102	Bourns
22	4	R9,R36,R90,R103	2K	ERJ3EKF2001	Panasonic
23	2	R38,R11	1.5K	ERJ3EKF1501	Panasonic
24	3	R56,R94,R99	0 ohm	ERJ3GSY0R00	Panasonic
25	1	R59	51	ERJ3GSYJ510	Panasonic
26	7	R60,R61,R62,R84,R85,R86, R87	0	ERJ3GSY0R00	Panasonic
27	6	R63,R64,R66,R69,R70,R72	1K	ERJ3EKF1001	Panasonic
28	2	R71,R65	1.1K	ERJ3EKF1101	Panasonic
29	2	R80,R79	RESISTOR		
30	3	R81,R82,R83	R		
31	4	R88,R91,R96,R101	1.33K	ERJ3EKF1331	Panasonic
32	2	R102,R89	4.02K	ERJ3EKF4021	Panasonic
33	2	R92,R97	499	ERJ3EKF4990	Panasonic
34	19	TP1,TP2,TP3,TP4,TP5,TP6,	TP-105-01-00		

FIG. b1A



Demodulator  
8500003K Module

4204

**Receive  
8500001C Module**

**LNA/PA  
8500002C Module**

4212

TX  
850000xx Module

4206

**Synthesizer  
85000088 Module**

4208

FI 6.62

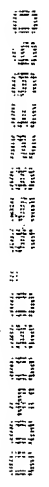
**MOTHERBOARD FOR PC/MCTA TEST BED**







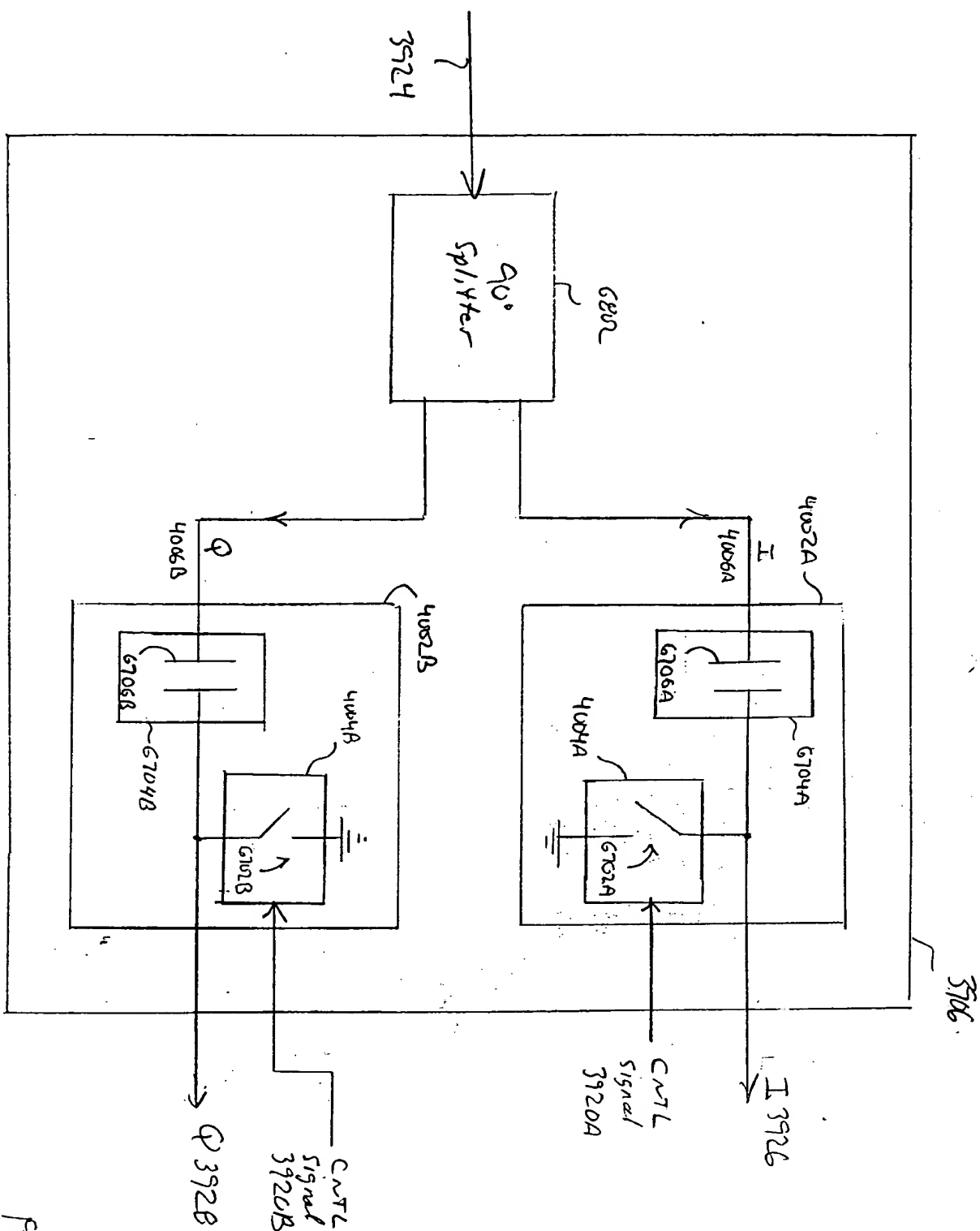
42/2

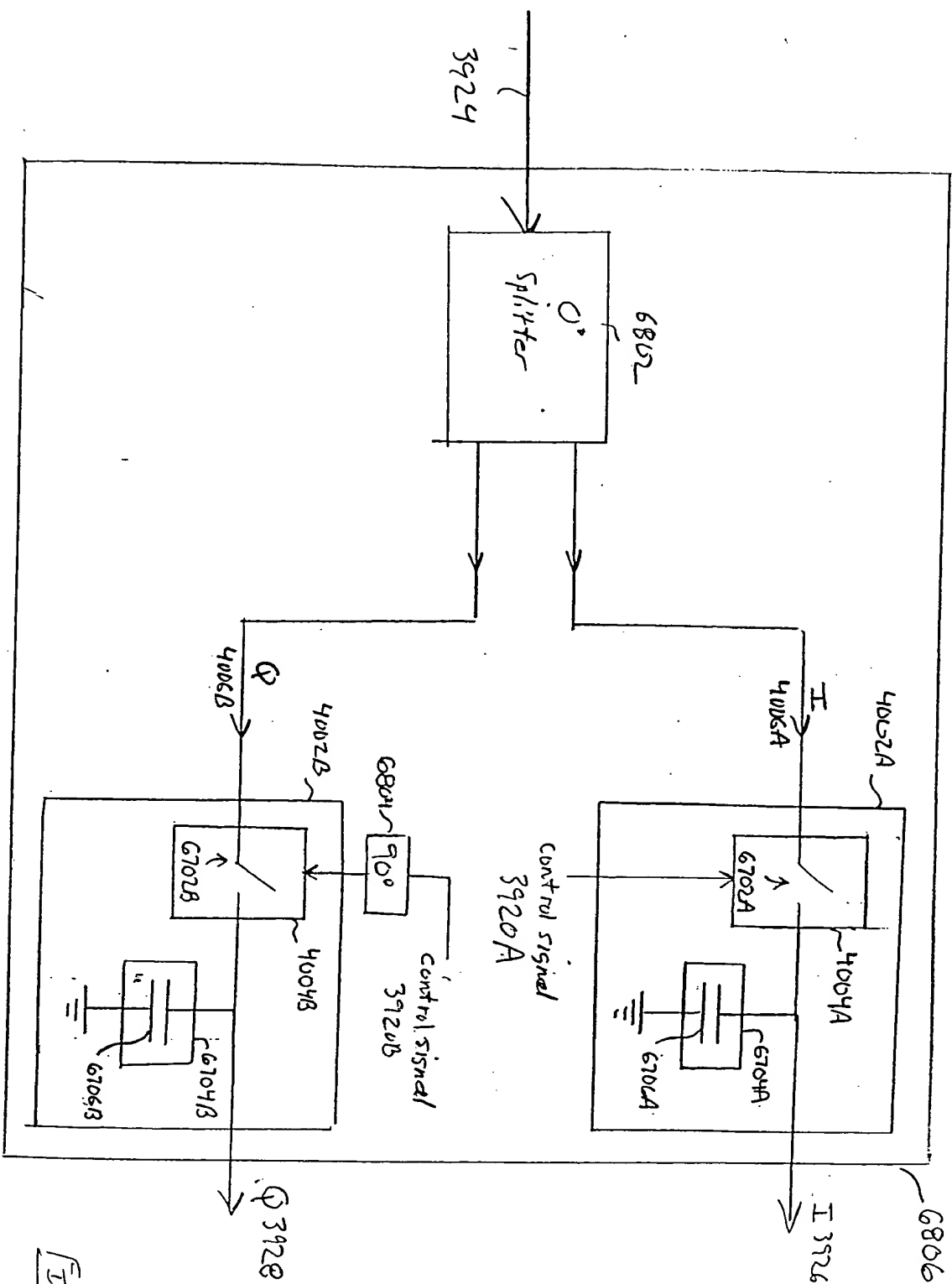


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Item	Qty	Reference	Part	Manufacturer	Part Description	Part Number
1	24	C1,C2,C3,C5,C6,C17,C18, C19,C20,C28,C35,C36,C37, C38,C40,C41,C44,C48,C55, C56,C57,C59,C60,C62	0.1uF	Murata	.1uF,.0603,X7R,20%,16V	GRM39X7R104MO16
2	1	C4	330pF	Murata	330pF,.0603,COG,10%,50	GRM39COG331K050
3	2	C10,C7	22pF	Murata	22pF,.0603,COG,10%,50	GRM39COG220K050
4	4	C8,C9,C23,C24	470pF	Murata	470pF,.0603,COG,10%,50	GRM39COG471K050
5	6	C11,C13,C25,C26,C27,C48	10pF	Murata	10pF,.0603,COG,10%,50	GRM39COG100K050
6	1	C12	8pF	Murata	8pF,.0603,COG,10%,50	GRM39COG080K050
7	8	C15,C16,C21,C22,C50,C54, C58,C61	100pF	Murata	100pF,.0603,COG,10%,50	GRM39COG101K050
8	3	C39,C43,C47	4.7uF	Panasonic	4.7 uF tantalum, 16V	ECS-T1CY475R
9	1	C52	33pF	Murata	330pF,.0603,COG,10%,50	GRM39COG330K050
10	2	FL1,FL2	MDR642E	Soshin	2.4-2.5GHz BPF	MDR642E
11	1	JP1	HEADER 7X2	Samtec	Dual Row, 7 pins per row	FTSH-107-01-F-D
12	3	J1,J2,J3	82MMCX-50-0-1	Suher	RF Connector	82MMCX-50-0-1
13	6	J4,J5,J6,J7,J9,J10	CON3	Berg	3 pin header w retentive leg	69190-403H
14	2	L10,L1	BLM21A601R	Murata	600 ohms@100MHz, 500 mA Ferrite Bead	BLM21A601R
15	4	L2,L3,L5,L6	22 nH	Coilcraft	22nH, 0805CS (2012), 5%	0805CS-220X-BC
16	9	L7,L8,L9,L11,L12,L13,L14, L15,L16	BLM11A121S	Murata	RF Bead	BLM11A121S
17	4	Q1,Q2,Q3,Q4	NDS336P	National	P-Channel FET	NDS336P
18	12	R1,R2,R5,R6,R7,R9,R11, R13,R16,R17,R18,R19	R	Panasonic		
19	2	R3,R4	100	Panasonic	0603, 100, 5%, 1/16 W	ERJ-3GSY-J-101
20	5	R10,R12,R15,R20,R21	4.7K	Panasonic	0603, 4.7K, 5%, 1/16 W	ERJ-3GSY-J-472
21	1	R14	3.6K	Panasonic	0603, 3.6K, 5%, 1/16 W	ERJ-3GSY-J-362
22	1	T1	80 ohm, L=100 mil, W=20 mil		80 ohm, L=100 mil, W=20 mil	
23	1	T2	50 ohm, L=100 mil, W=54 mil		50 ohm, L=100 mil, W=54 mil	
24	1	T3	102 ohm, L=220 mil, W=10 mil		102 ohm, L=220 mil, W=10 mil	
25	1	T4	67 ohm, L=200 mil, W=30.7 mil		67 ohm, L=200 mil, W=30.7 mil	
26	1	T5	100 ohm, L=200 mil, W=10.7 mil		100 ohm, L=200 mil, W=10.7 mil	
27	4	U2,U3,U6,U7	MAAM22010	MACOM	2.4-2.5 GHz LNA	MAAM22010
28	1	U4	UPG152TA	NEC	RF Switch	UPG152TA
29	5	U11,U12,U16,U18,U19	NC7S04M5	National	Inverter	NC7S04M5
30	1	U14	TK11230B	TOKO	Voltage Regulator	TK11230B
31	1	U17	RF2128P	RFMD	Medium Power Linear Amplifier	RF2128P







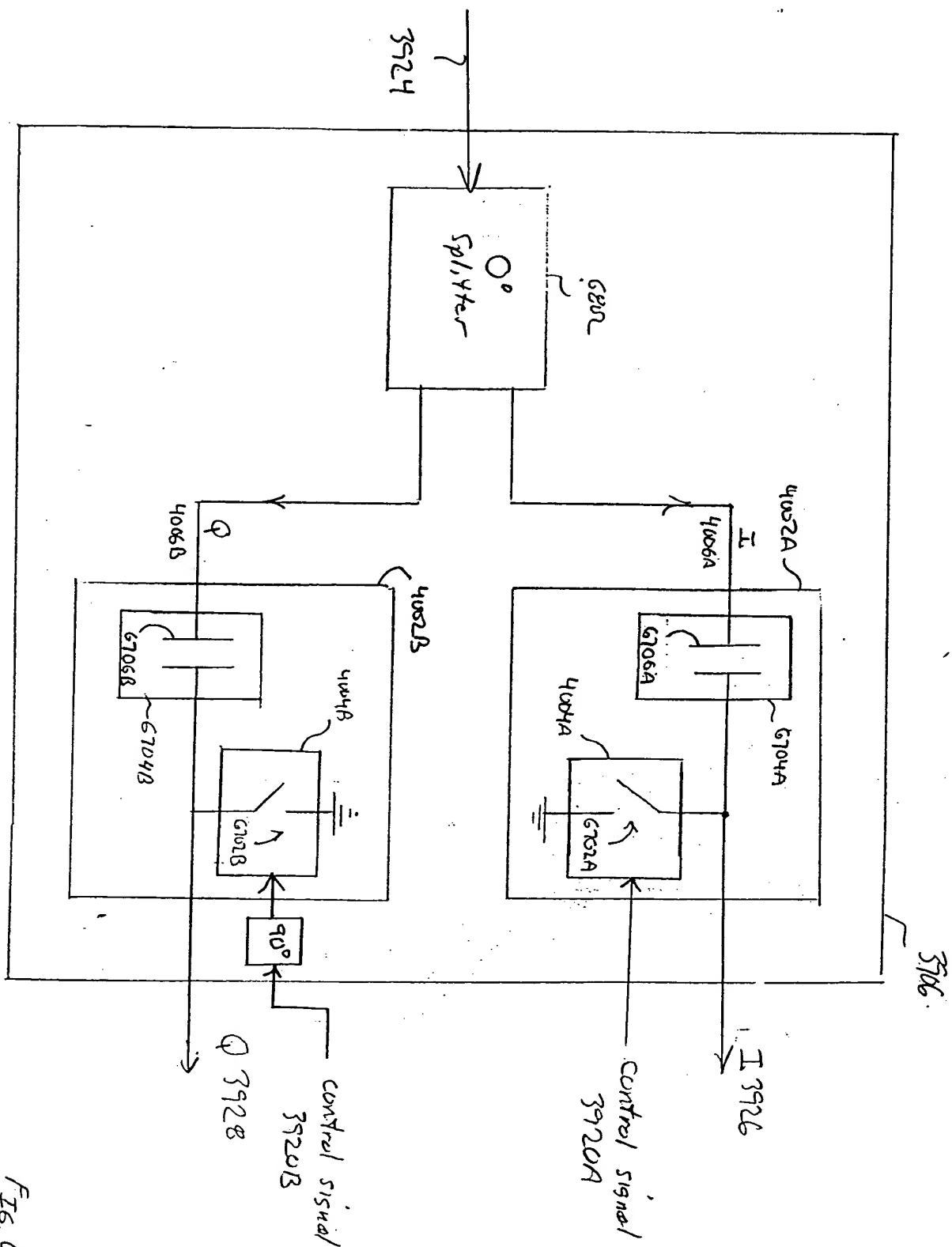


FIG. 68B

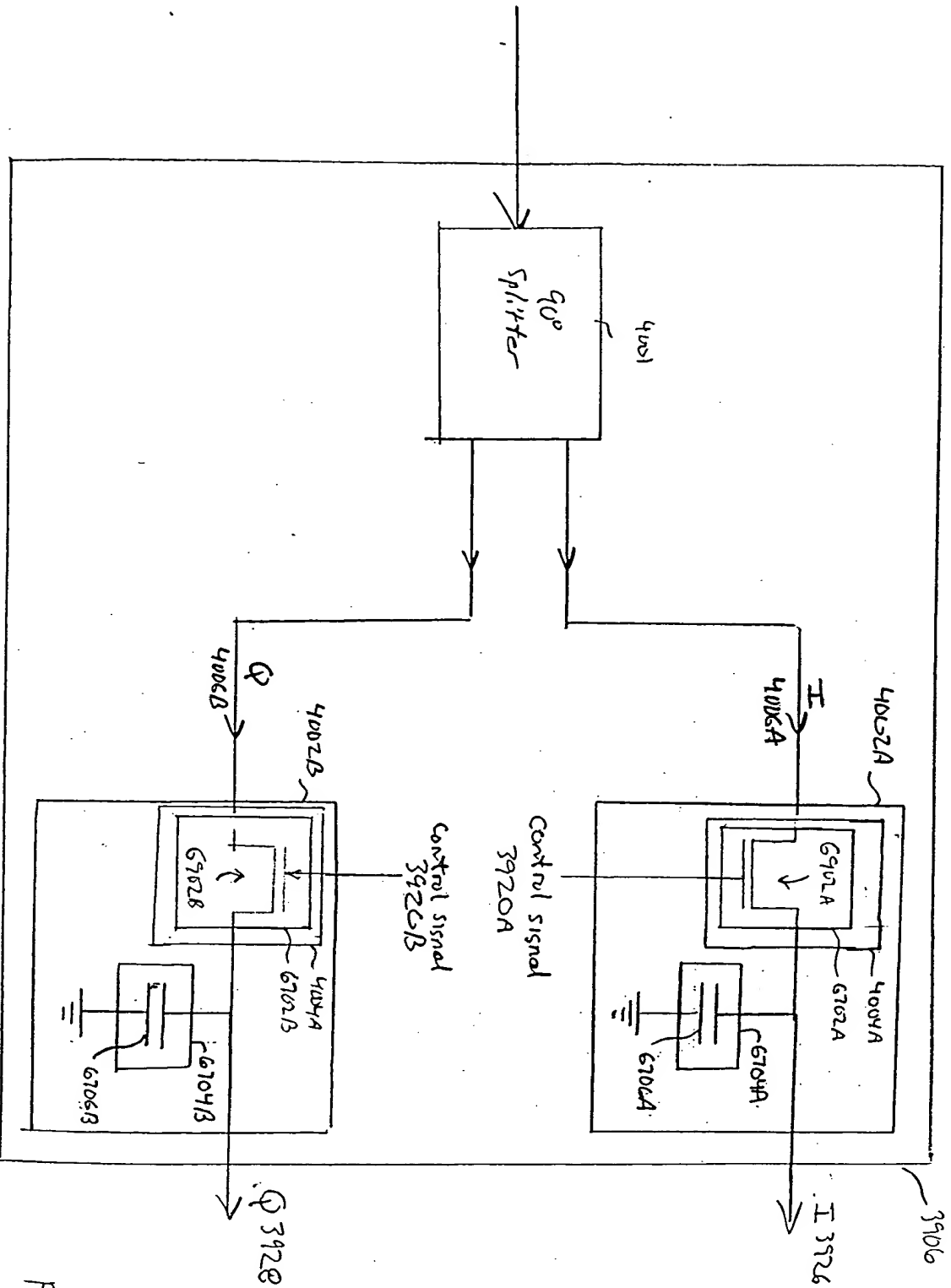


FIG. 61A

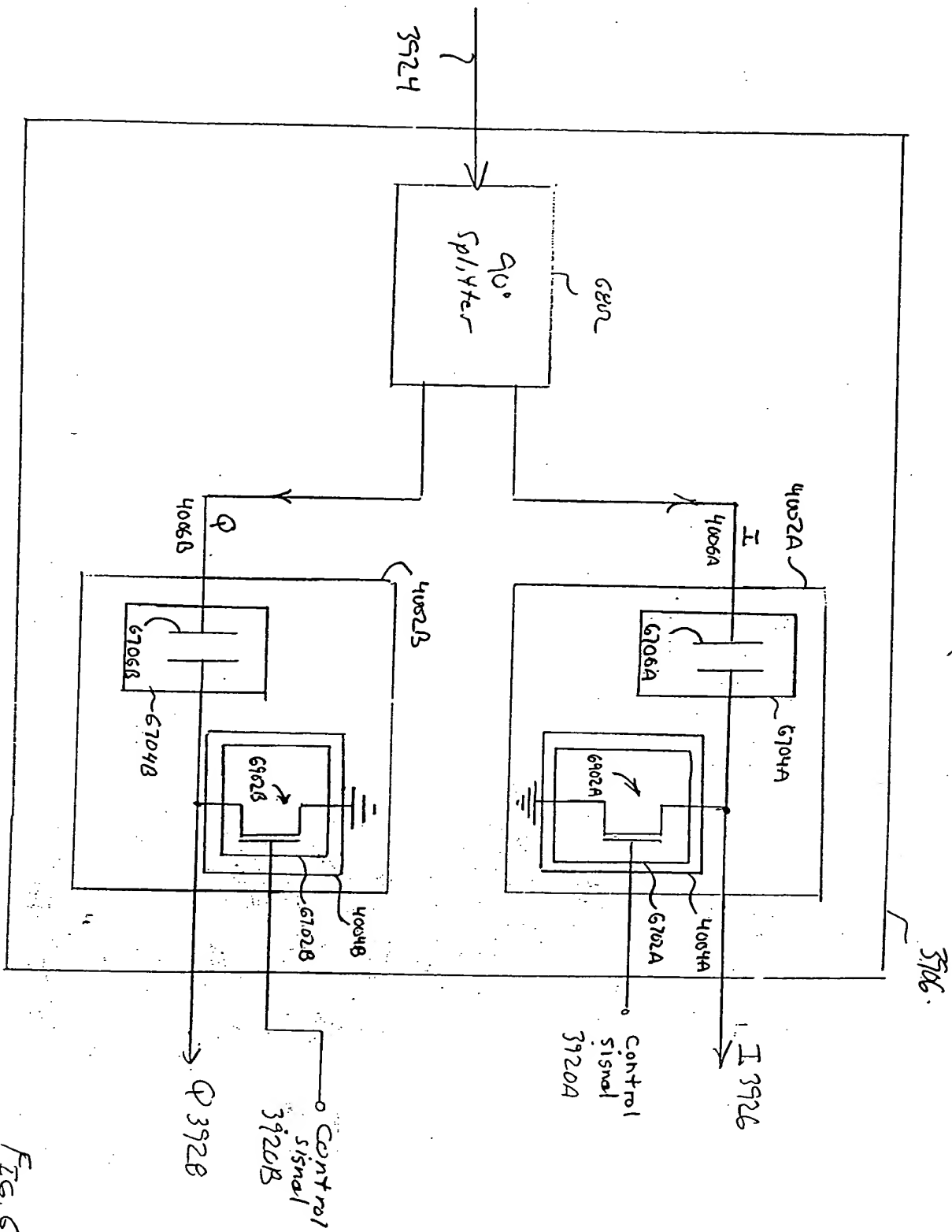


FIG. 67B



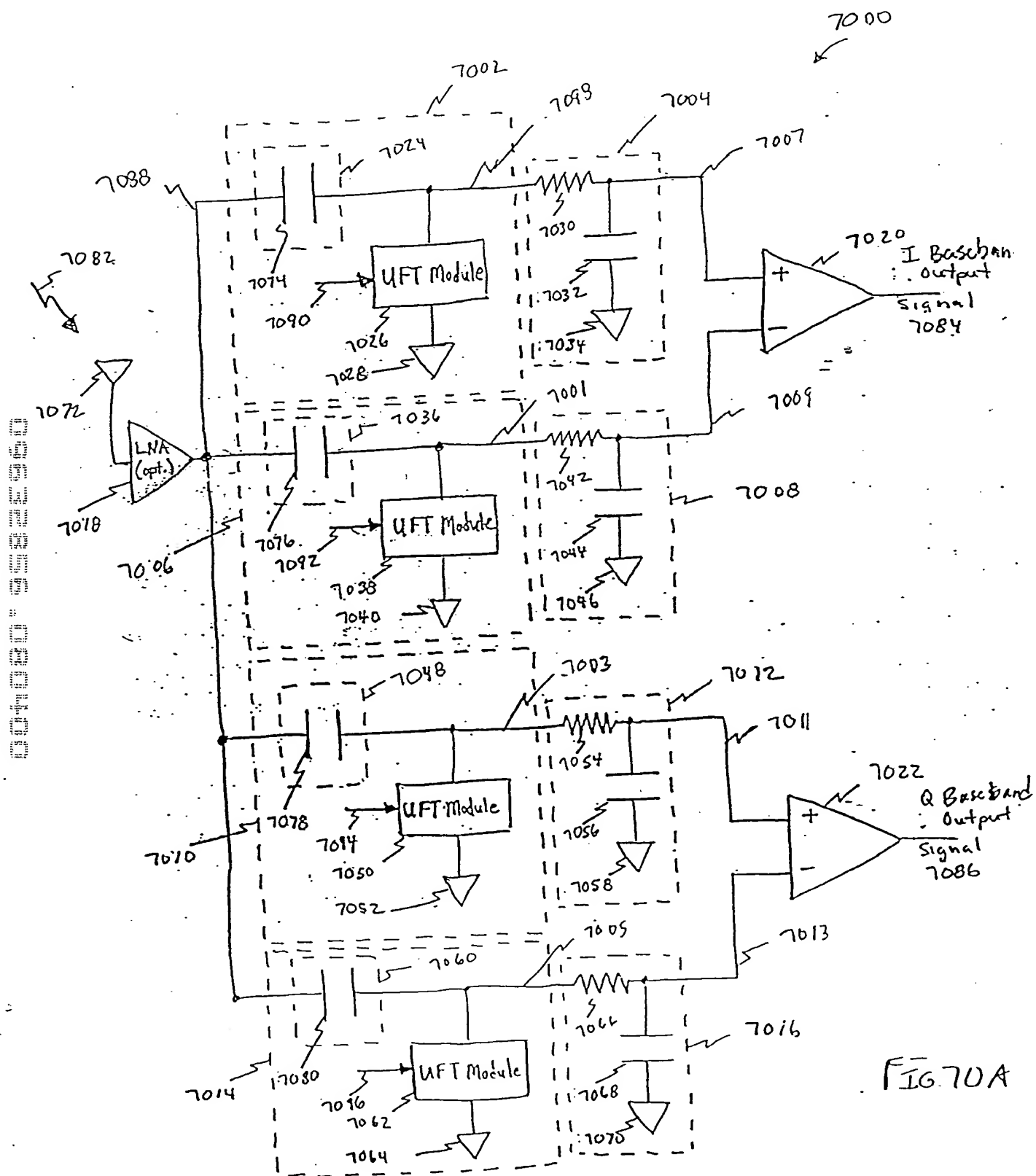
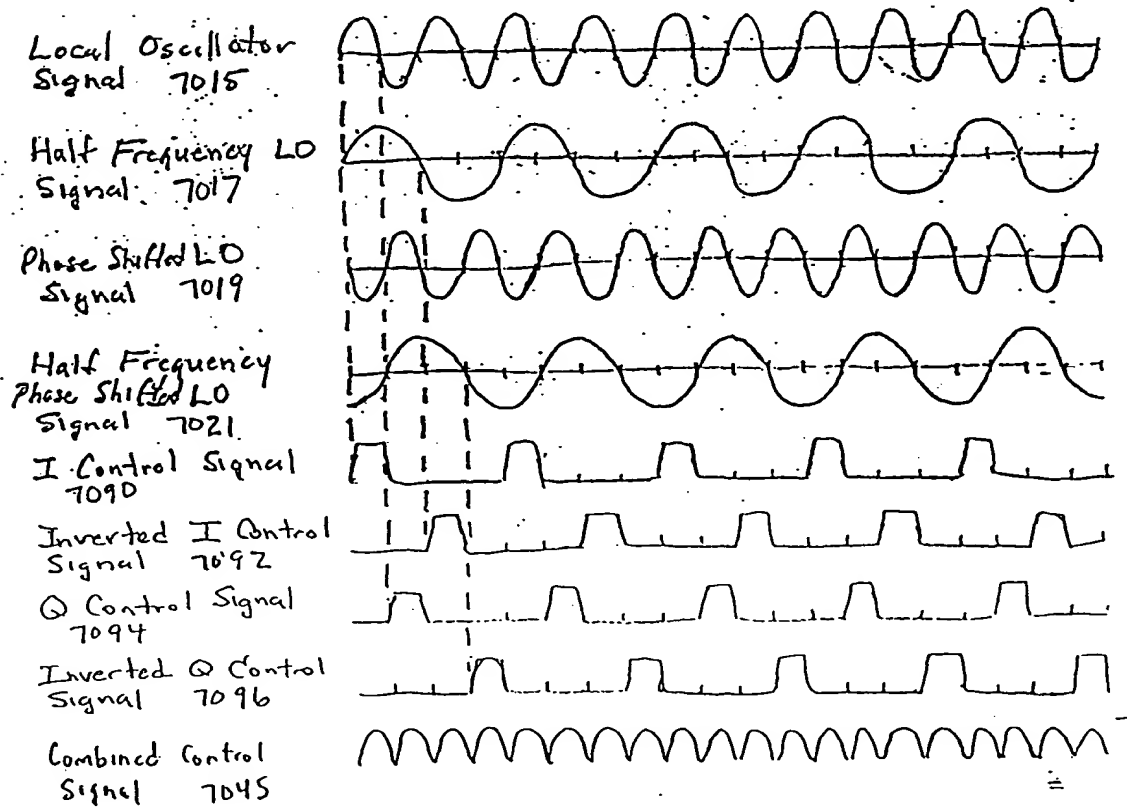
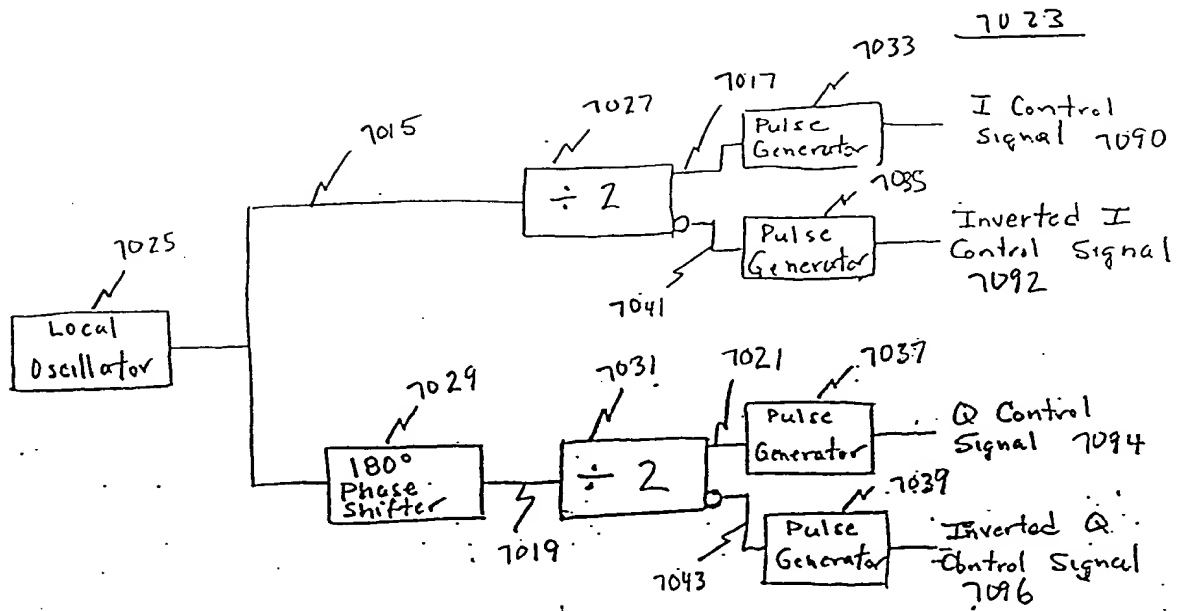


FIG 70A



(A) IDEMOD PULSE RELATIONSHIPS TO INPUT RF CARRIER

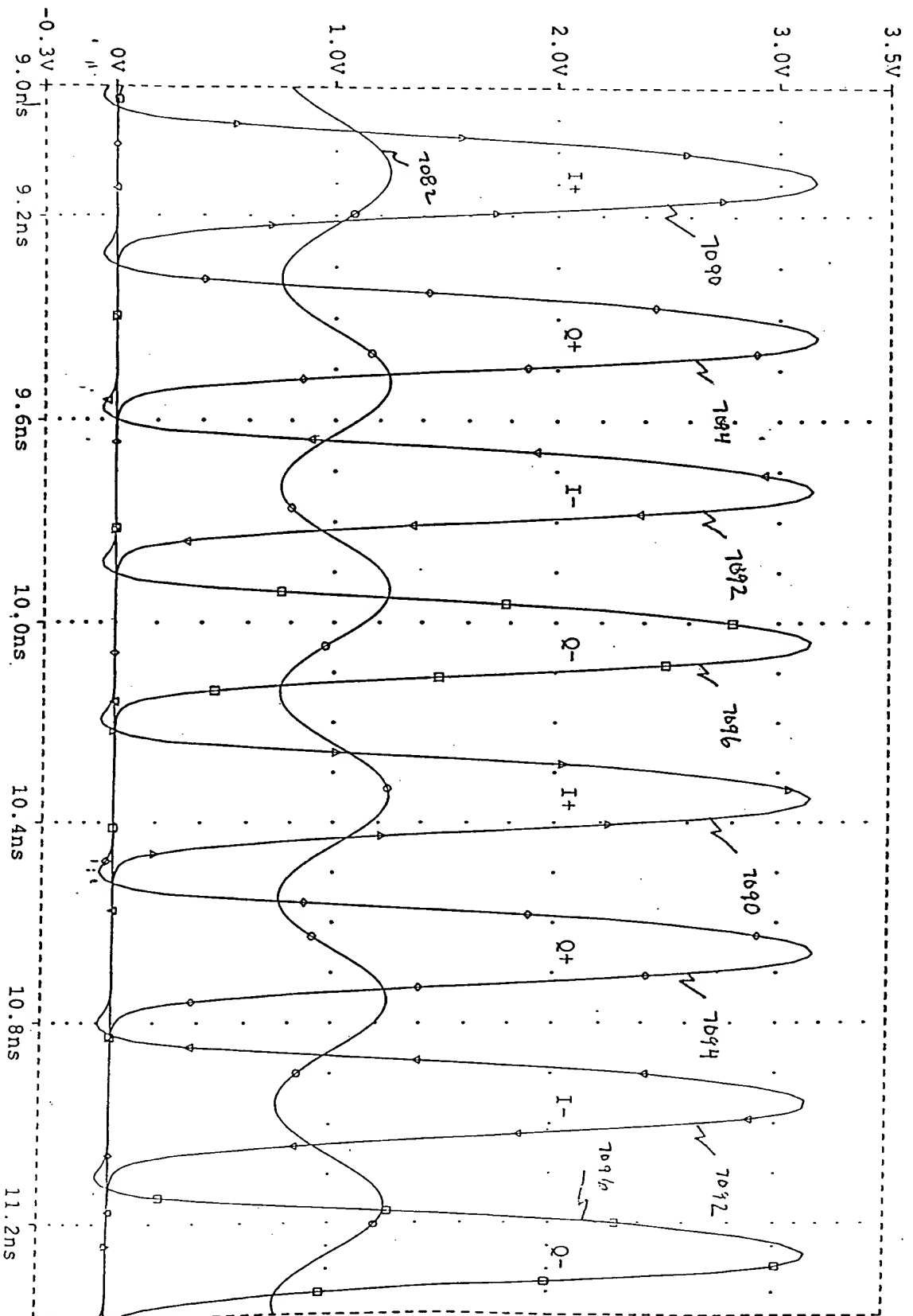
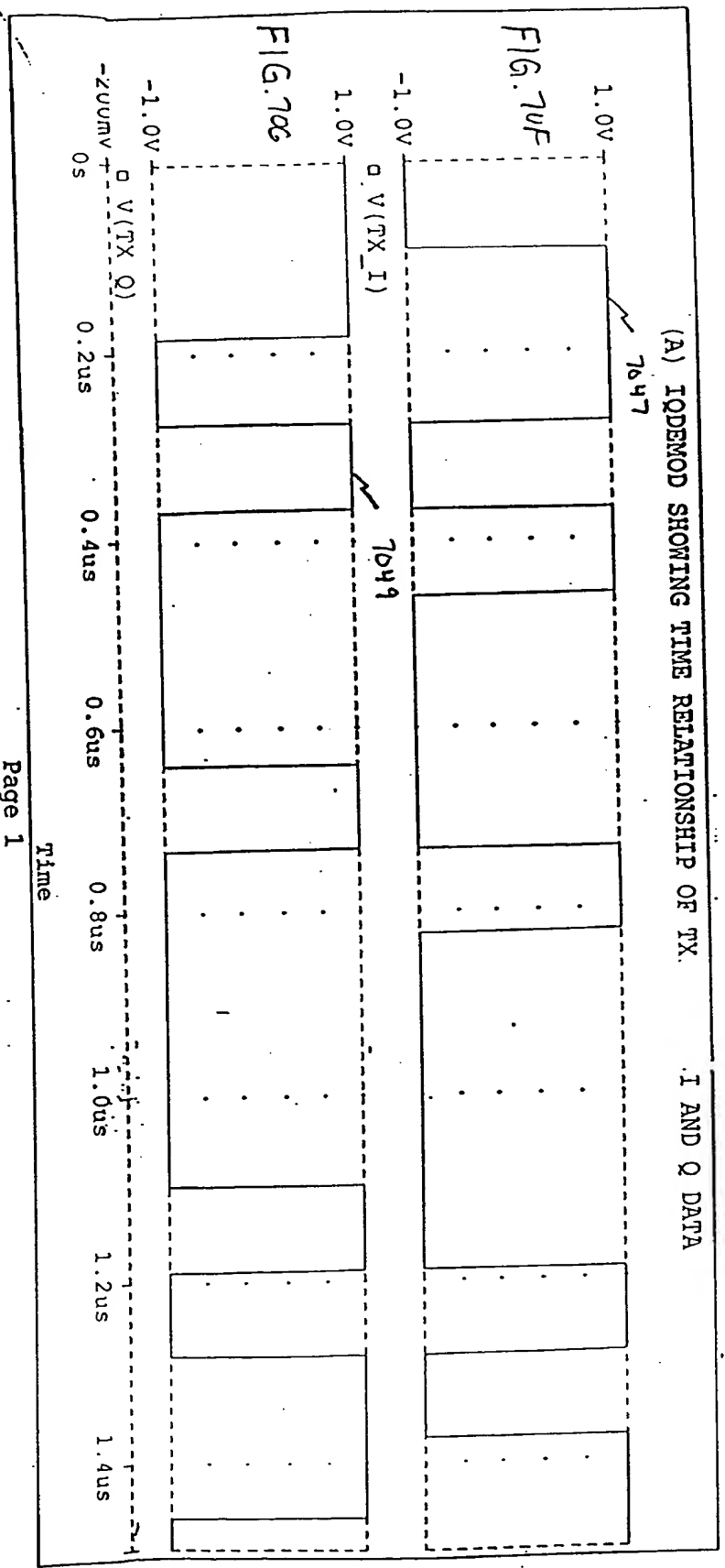


FIG. 70D

[illegible]



(A) IQDEMOP SHOWING TIME RELATIONSHIP OF TX. I AND Q DATA



(B) IQDEM0D SHOWING QPSK MOD OUTPUT (TOP) WITH IMOD AND QMOD AND I AND Q DATA (BOTTOM)

FIG. 70H

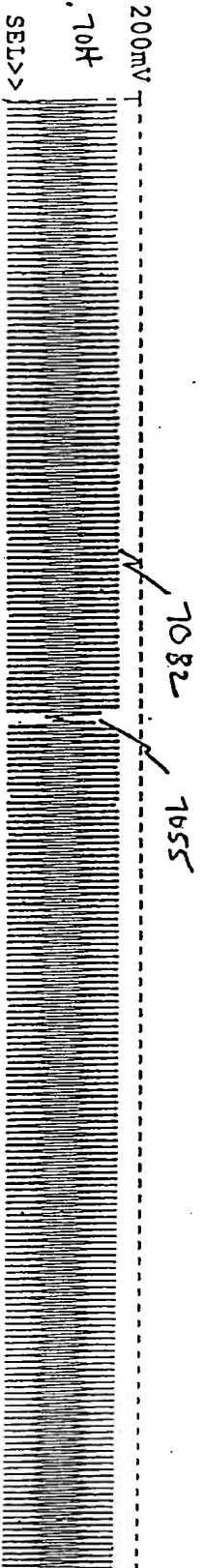


FIG. 70I

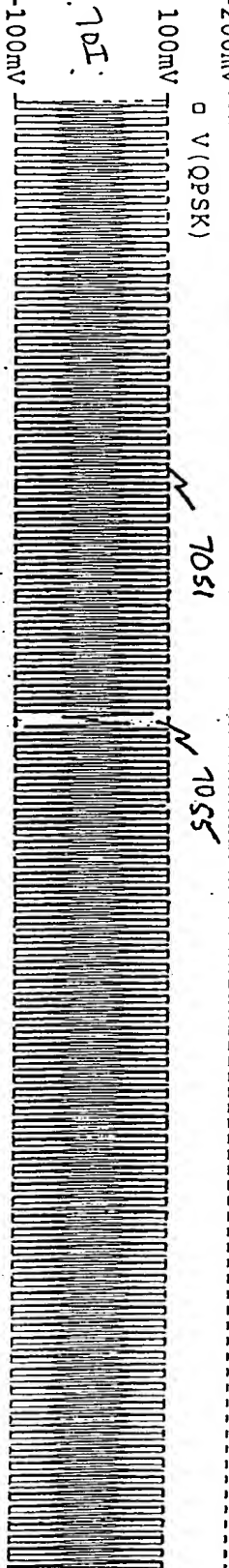


FIG. 70J

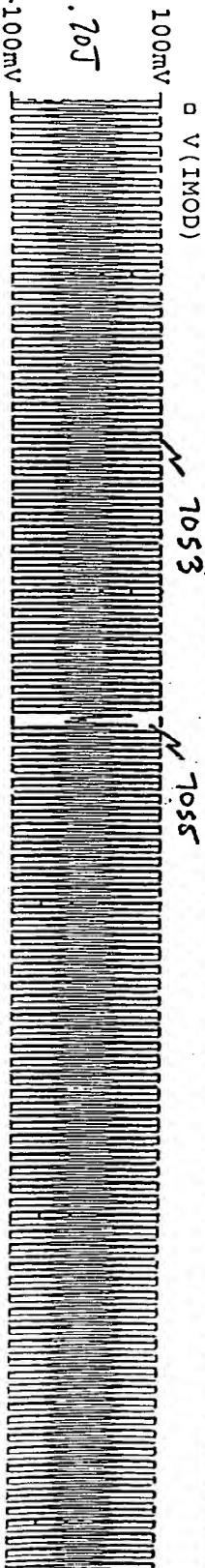


FIG. 70K

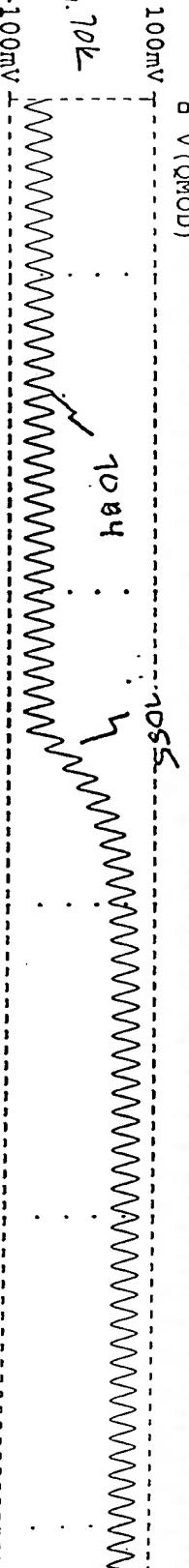
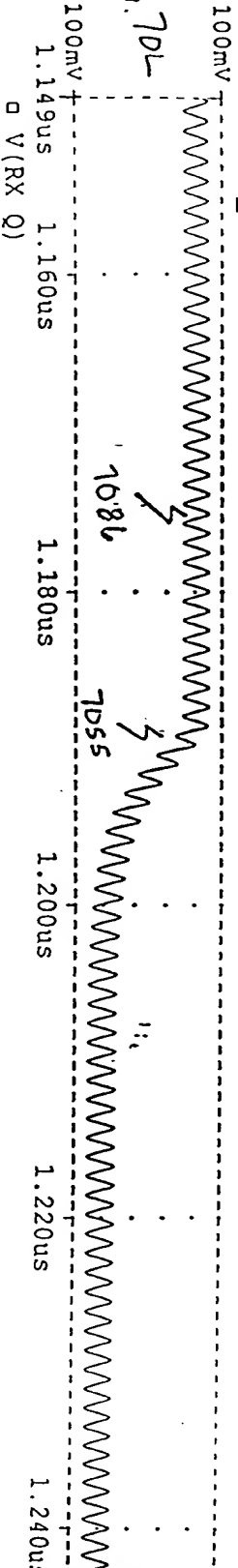


FIG. 70L



Time

(B) IQDEMOD RELATIONSHIP OF I AND Q RECEIVED DATA DIFFERENTIAL (BOTTOM) AND SINGLE ENDED AFTER DIFF AMP...

FIG. 704

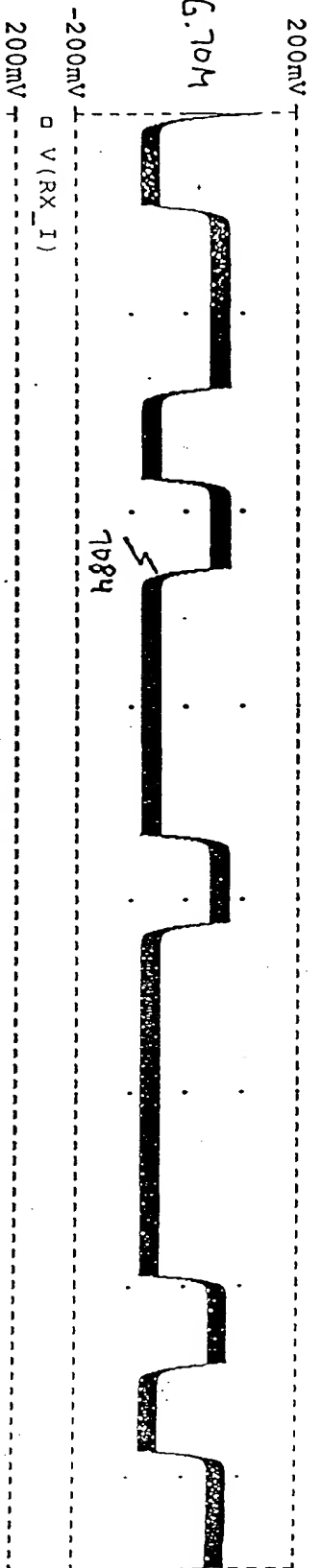


FIG. 705

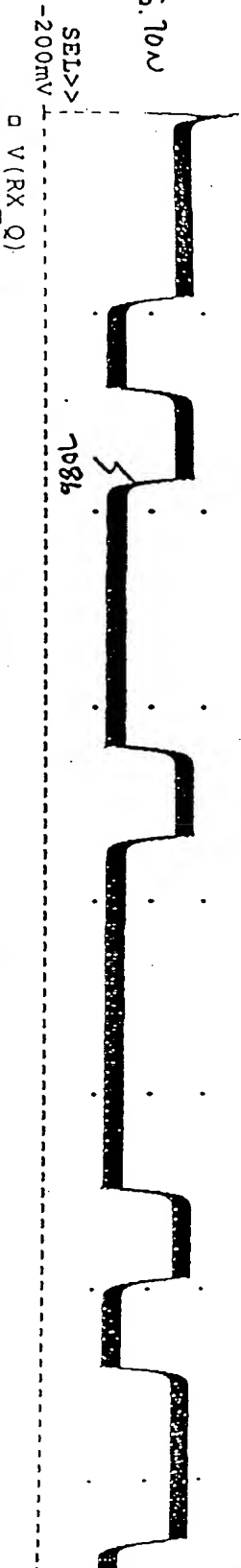


FIG. 706

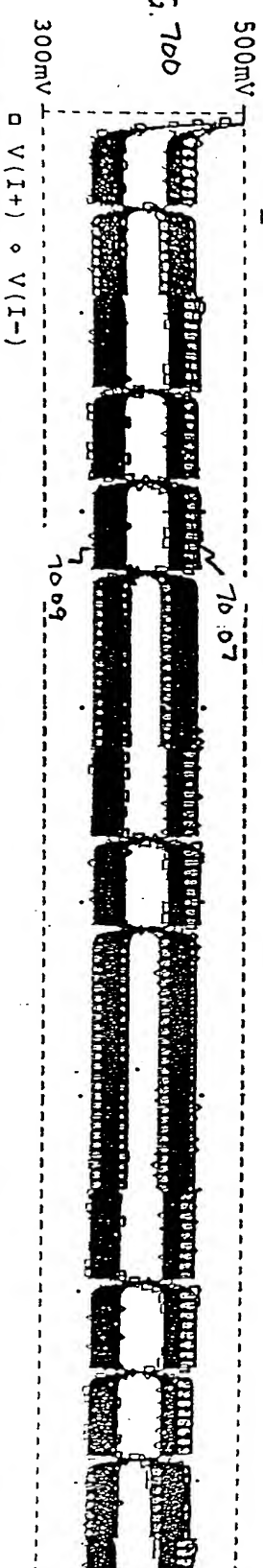
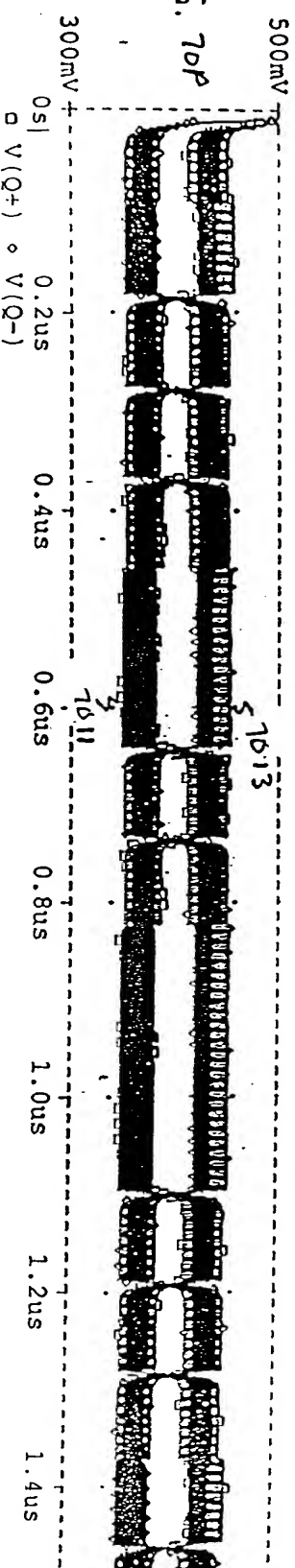


FIG. 707



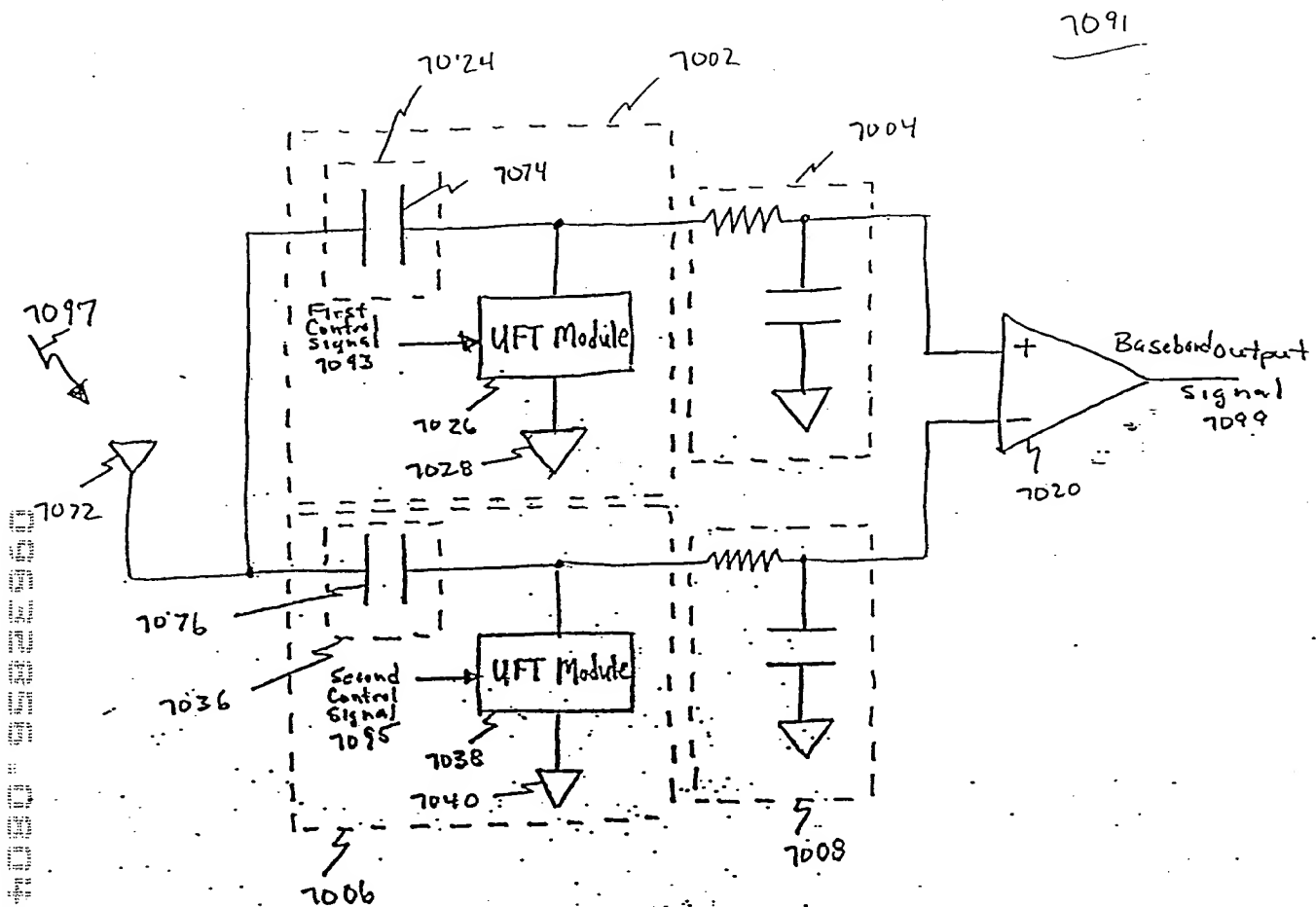


FIG. 70Q



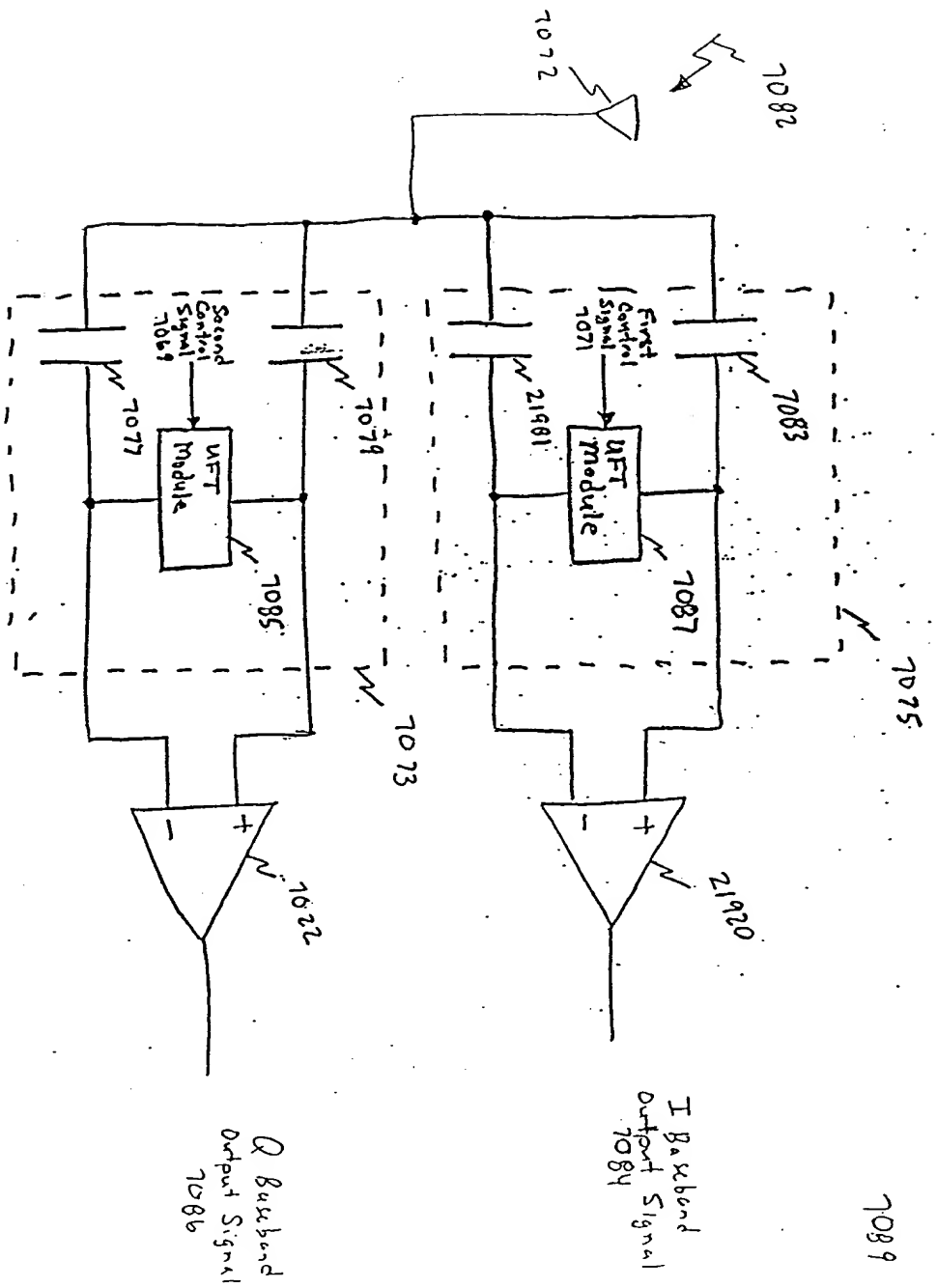


FIG. 70 R



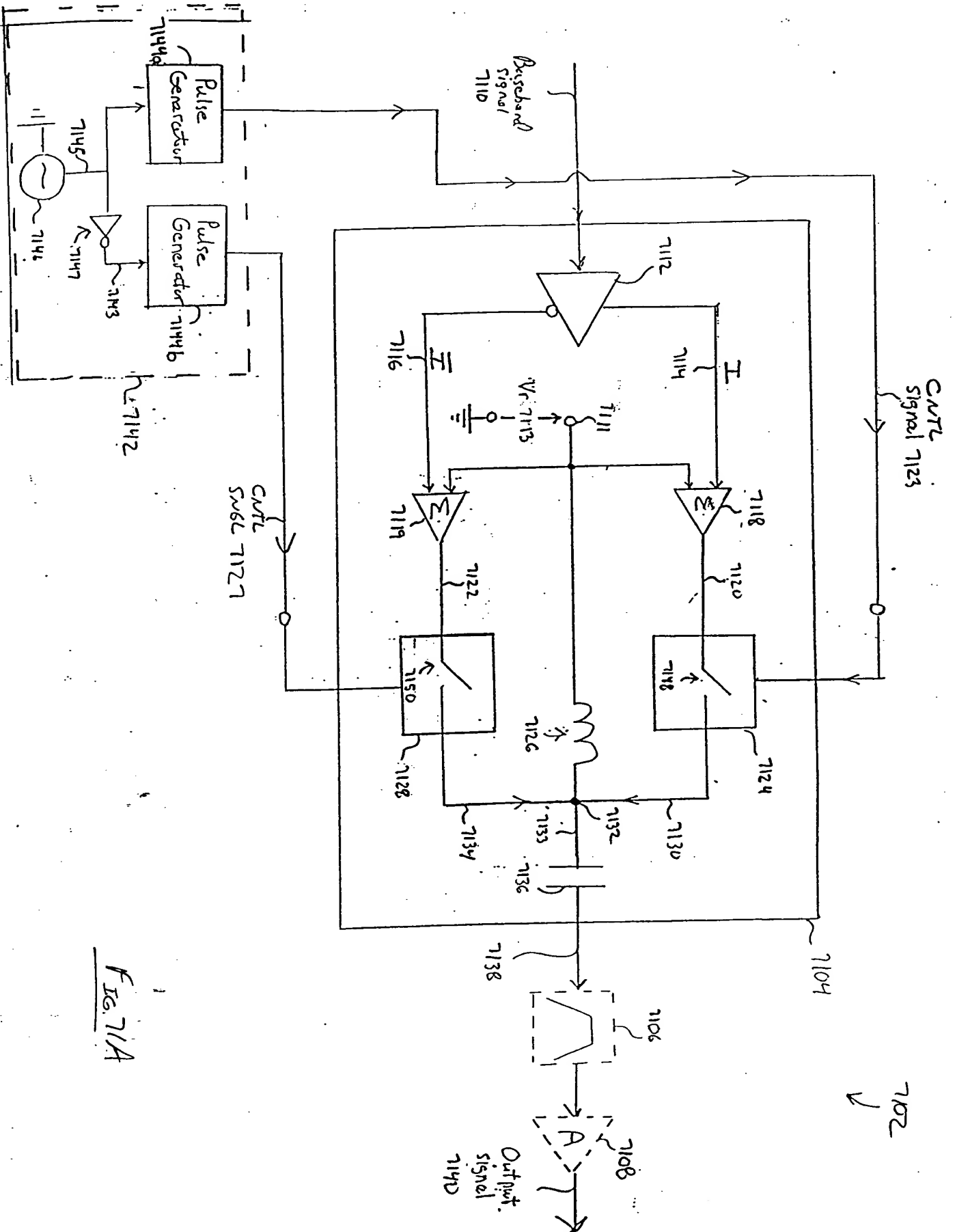


FIG. 71A

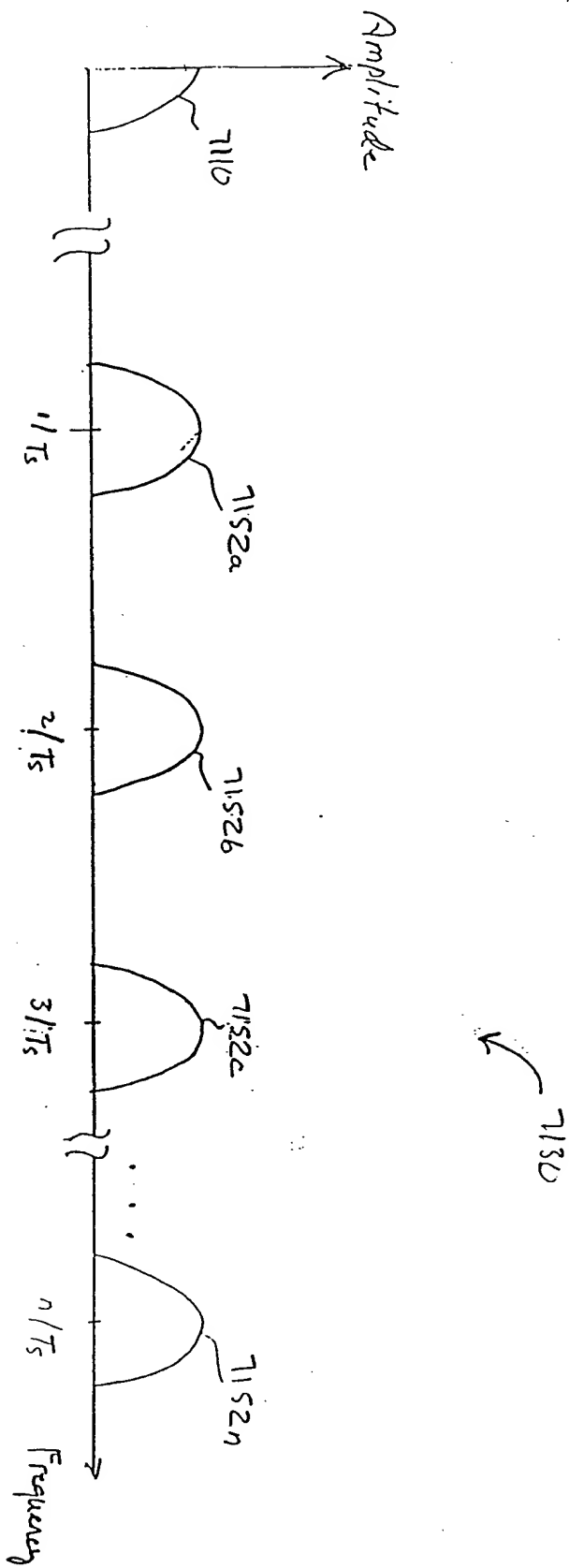


FIG. 71B



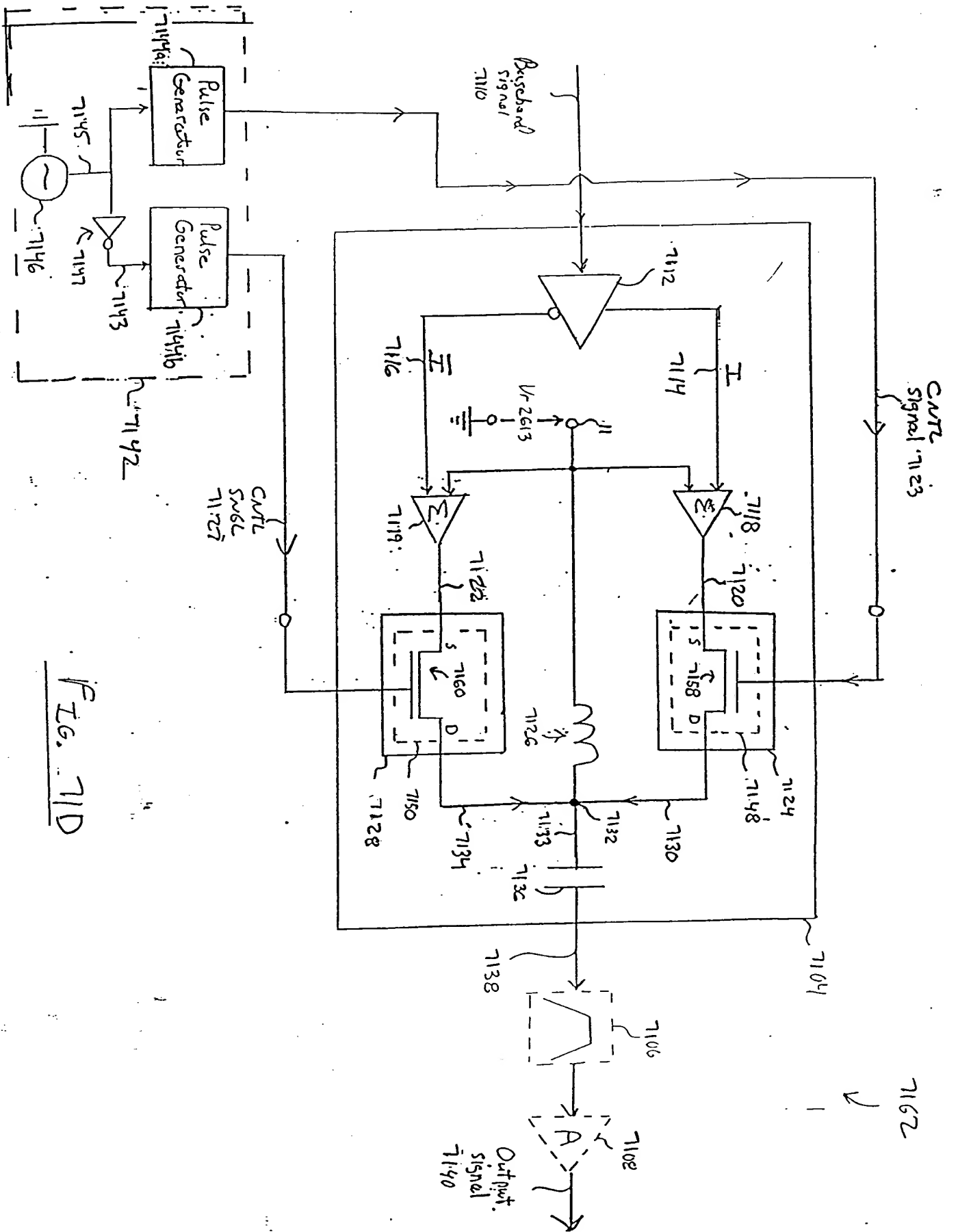


Fig. 71D

FIG. 72A

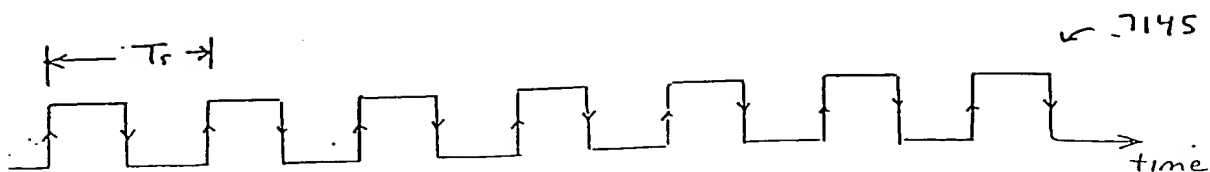


FIG. 72B

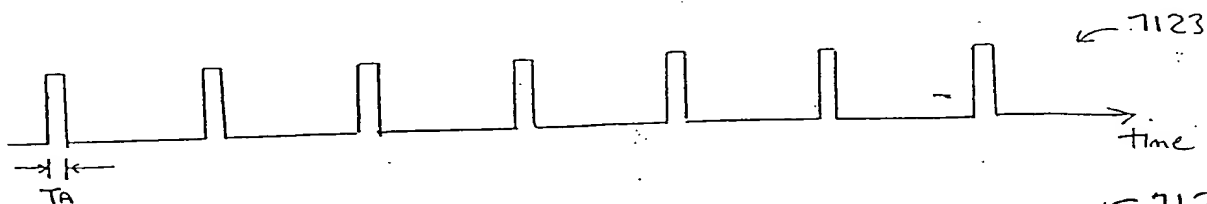


FIG. 72C

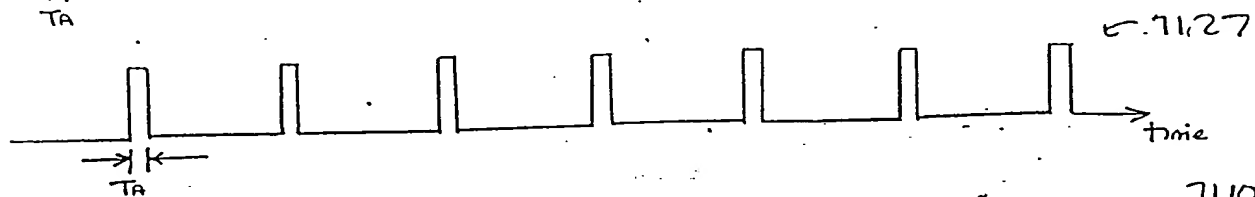


FIG. 72D

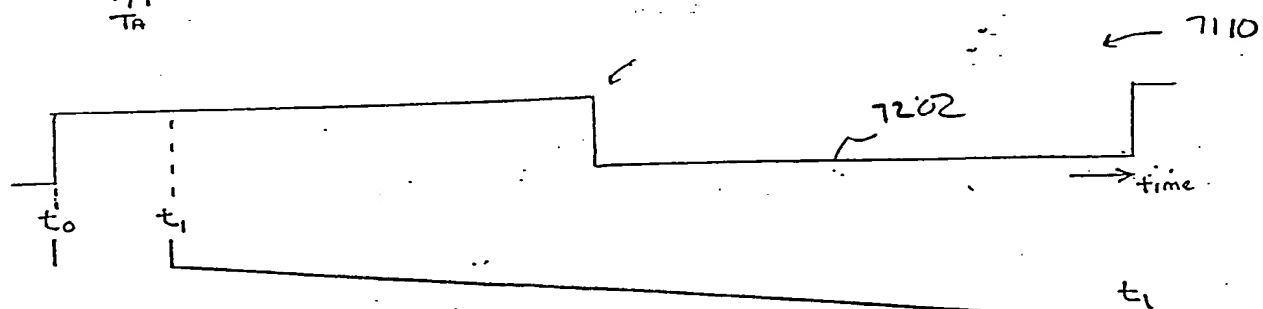


FIG. 72E

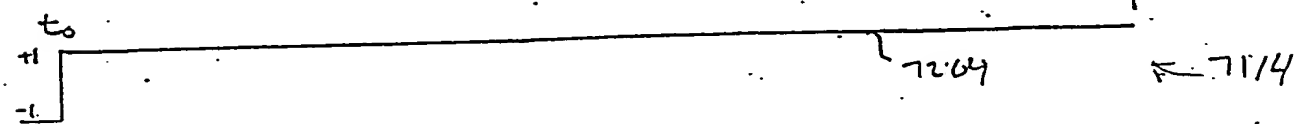


FIG. 72F



FIG. 72G

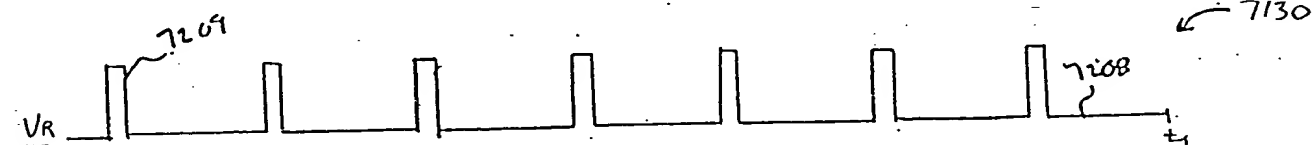


FIG. 72H

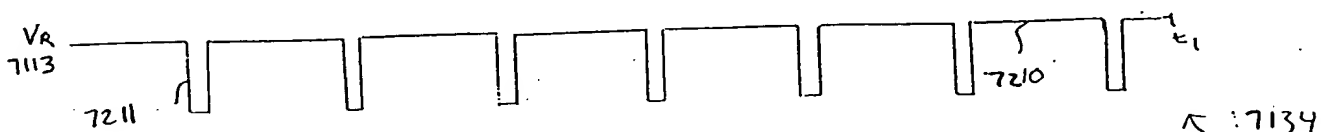
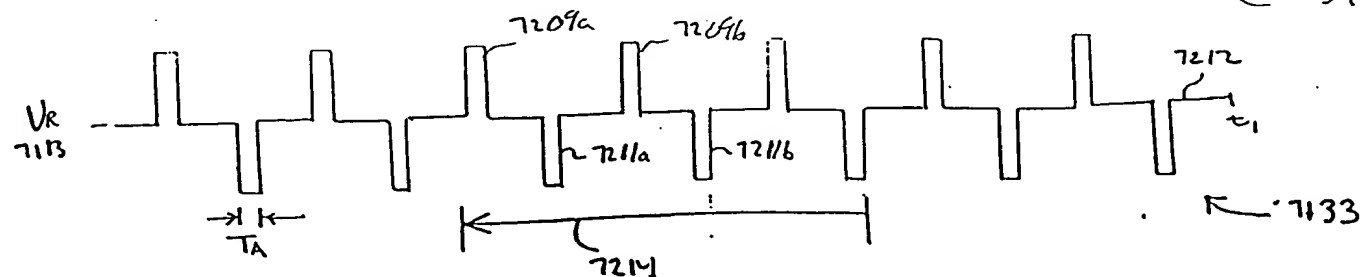


FIG. 72I







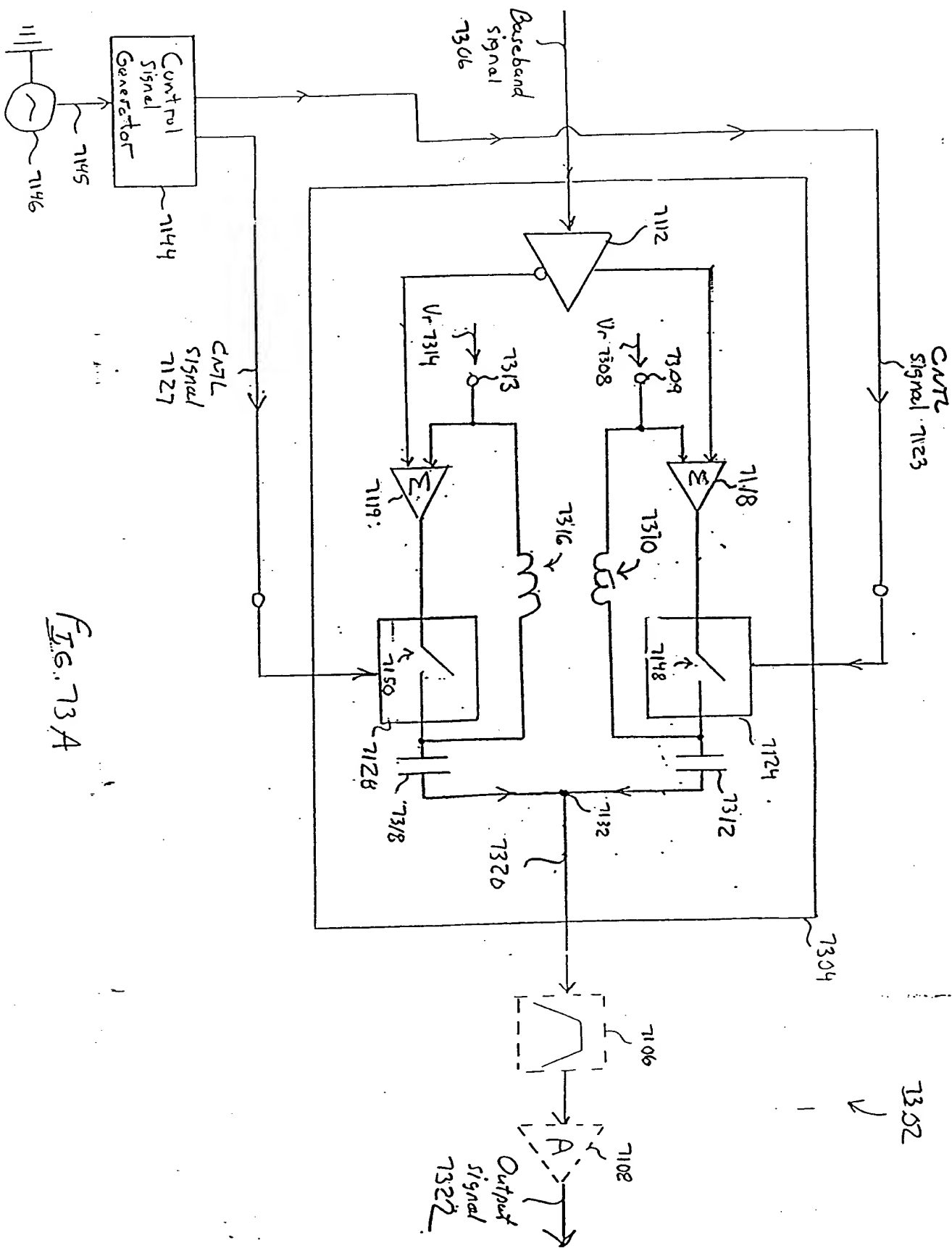


Fig. 73A

FIG. 73A is a block diagram of a baseband signal processor.



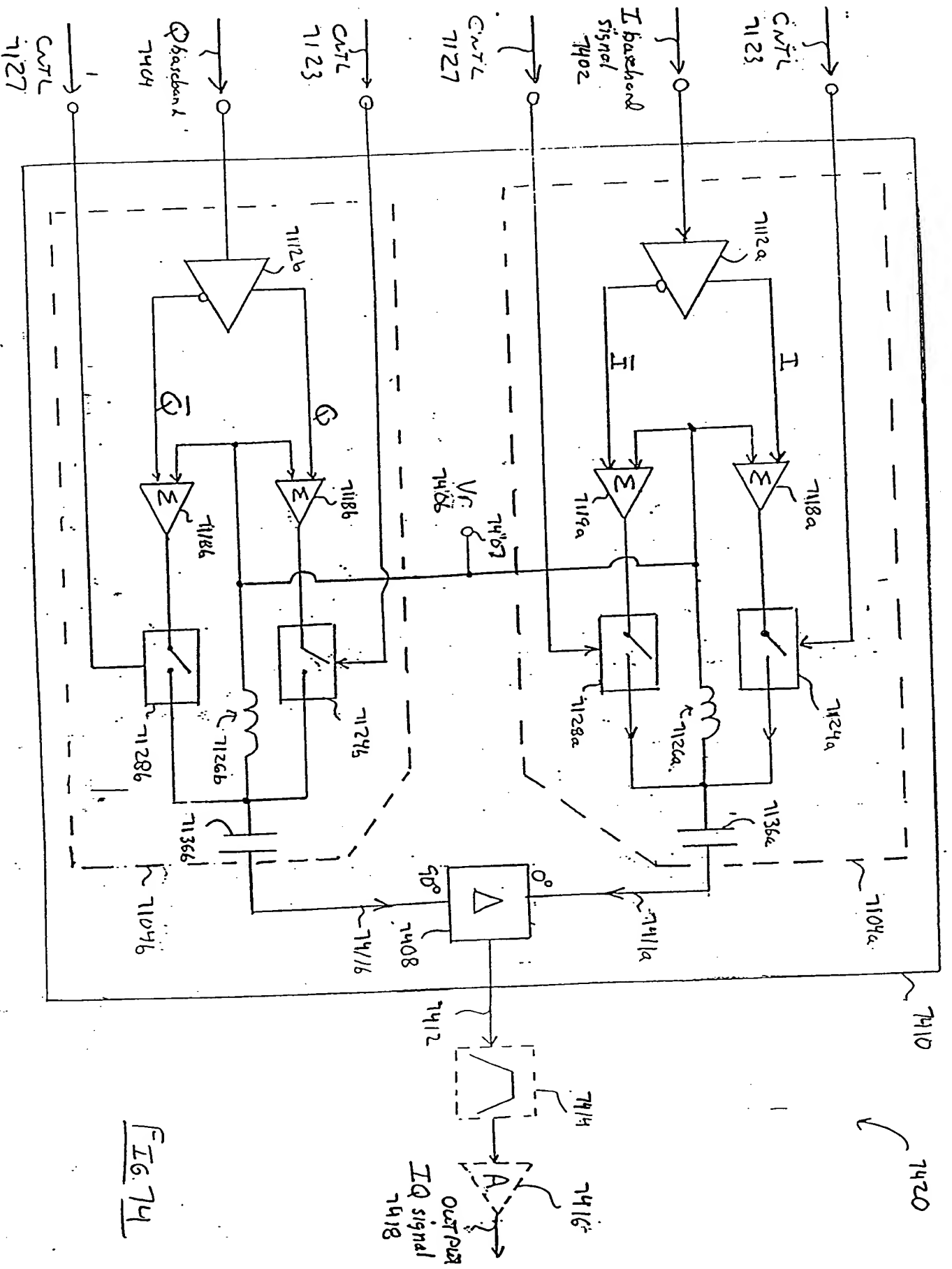


FIG. 74



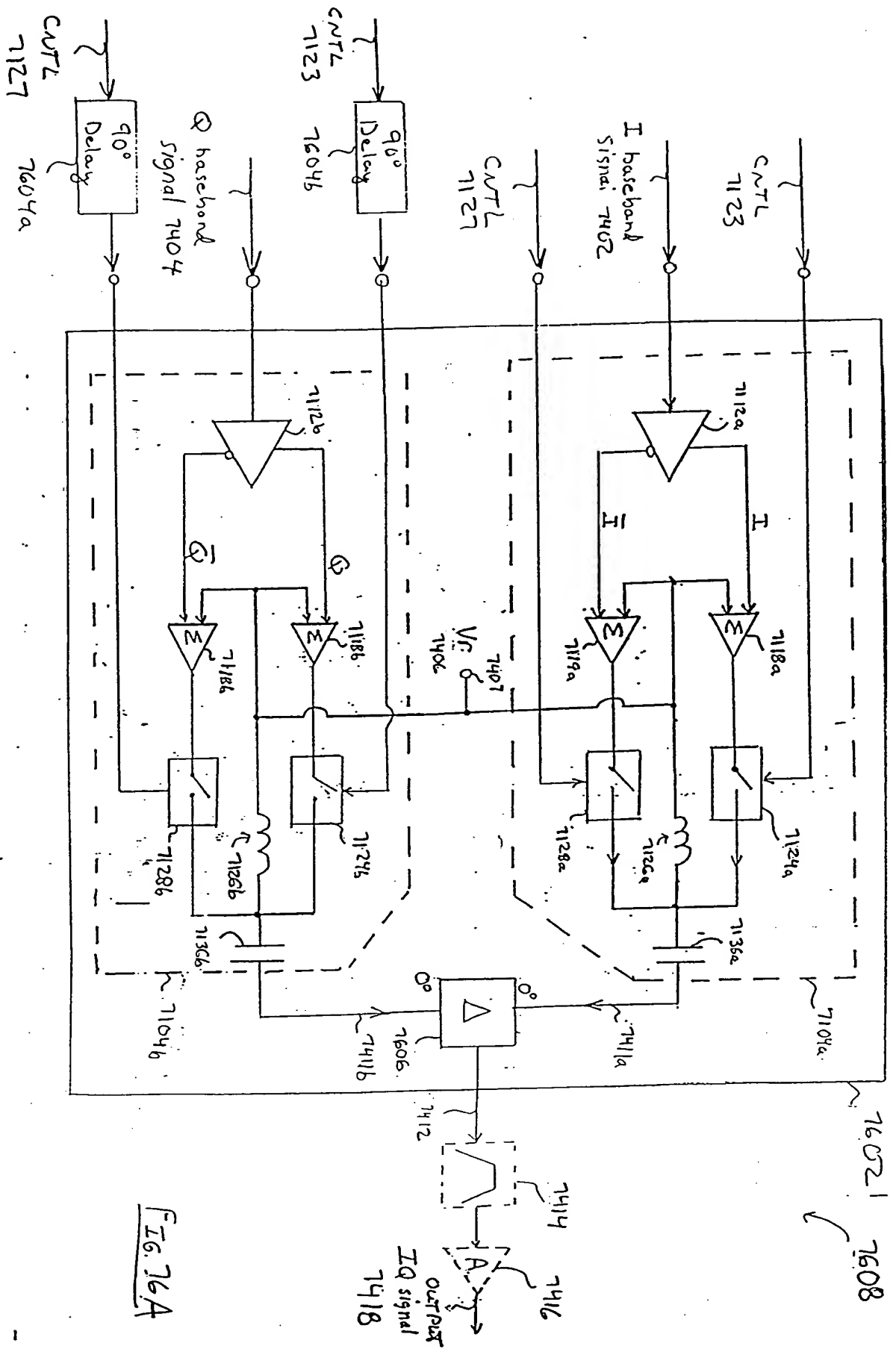
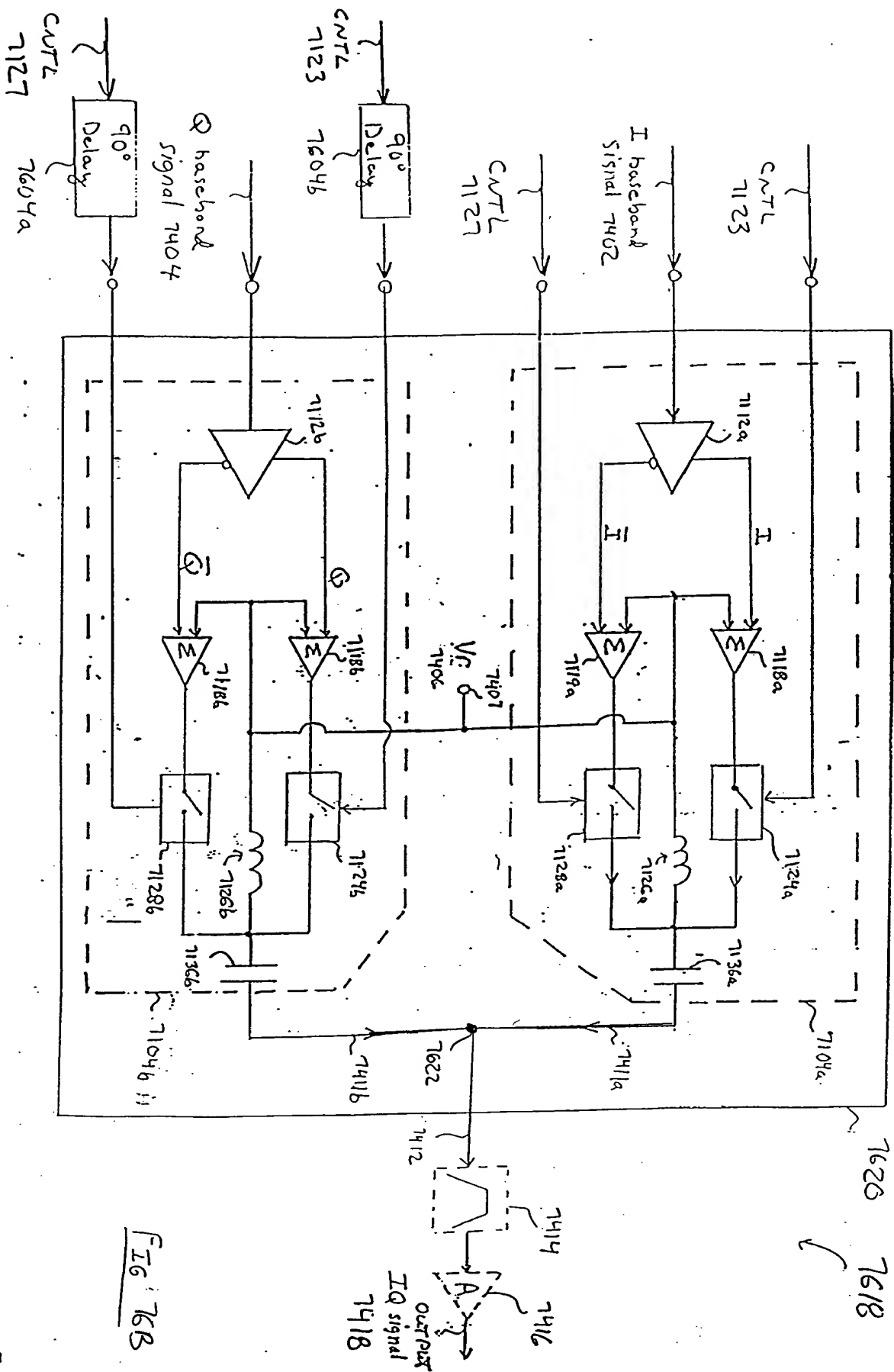


FIG. 76A



76B

*(continued from page 6)*



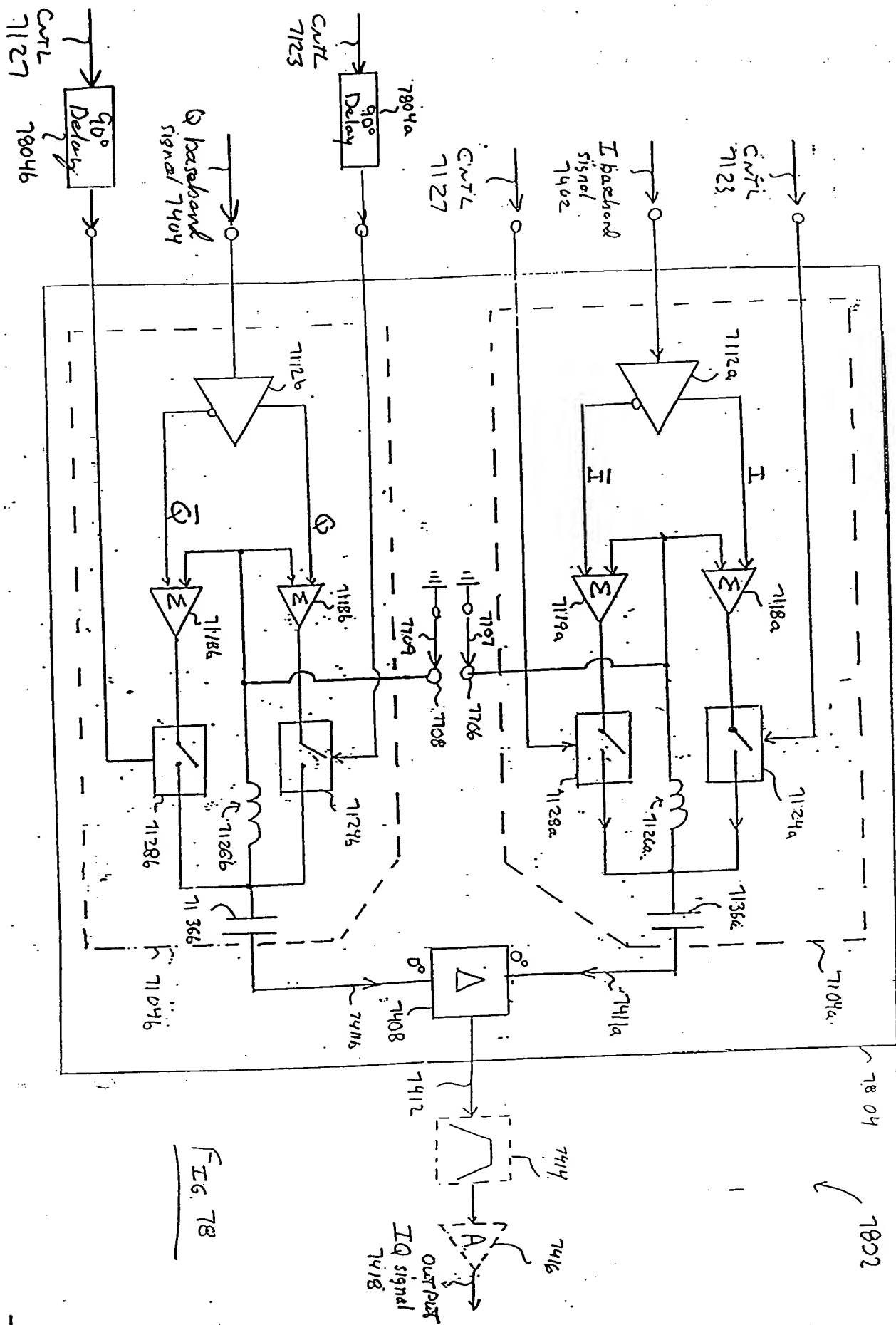


FIG. 78



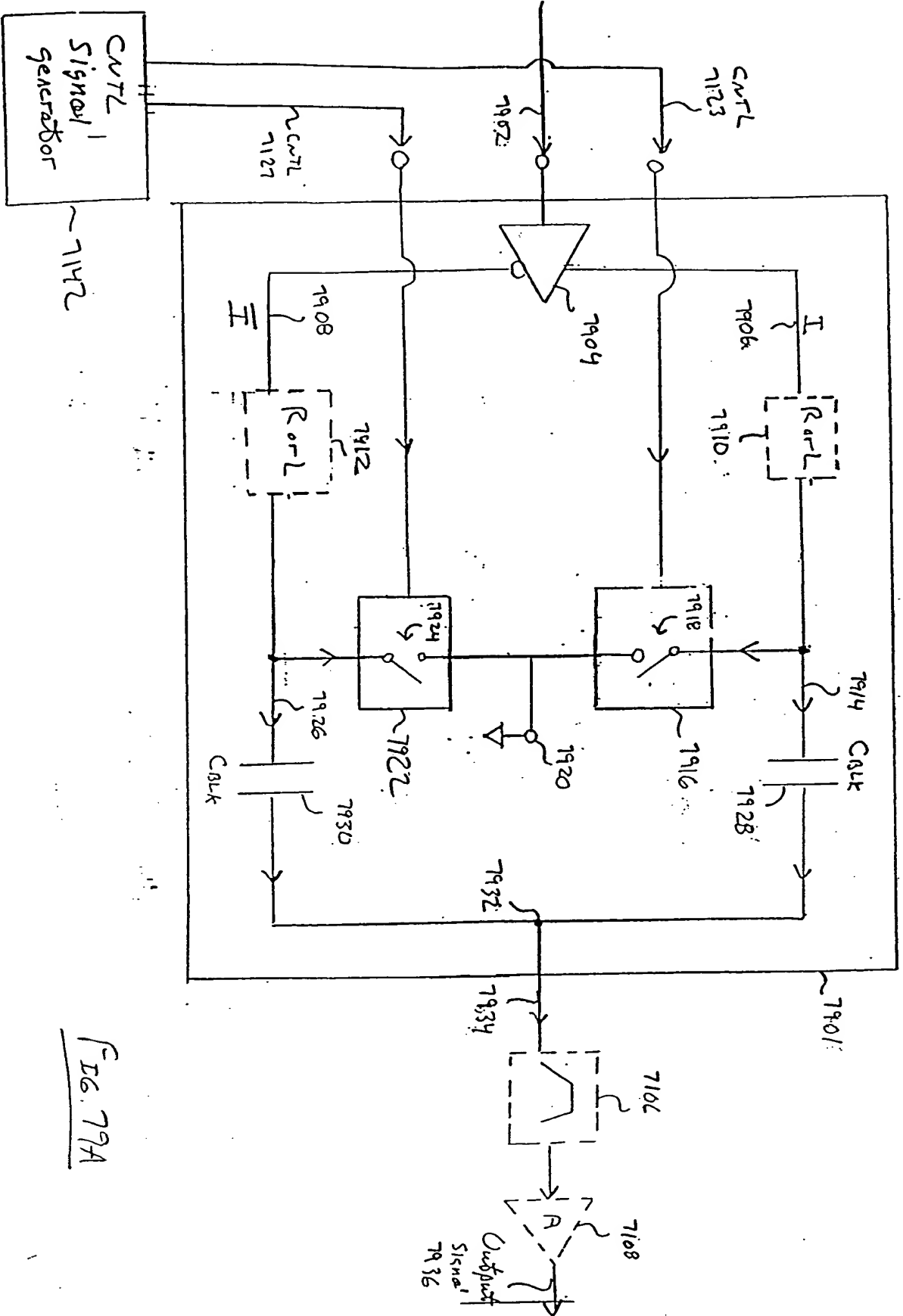


Fig. 79A



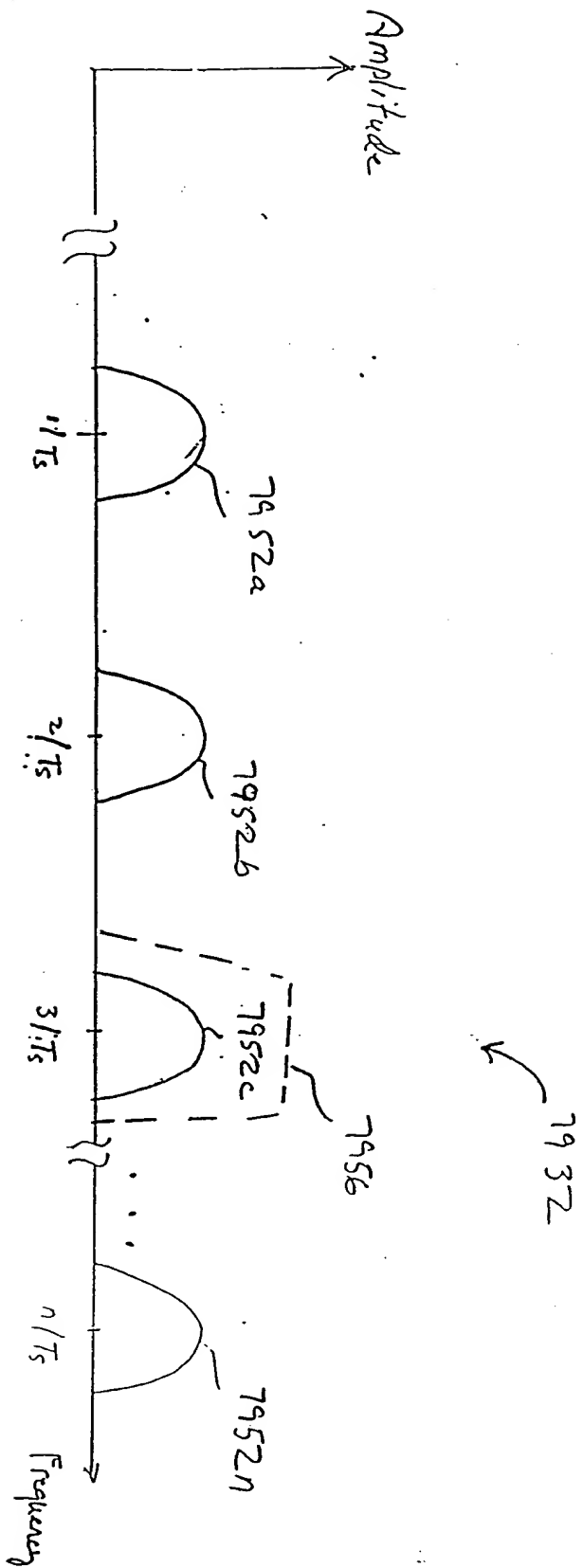
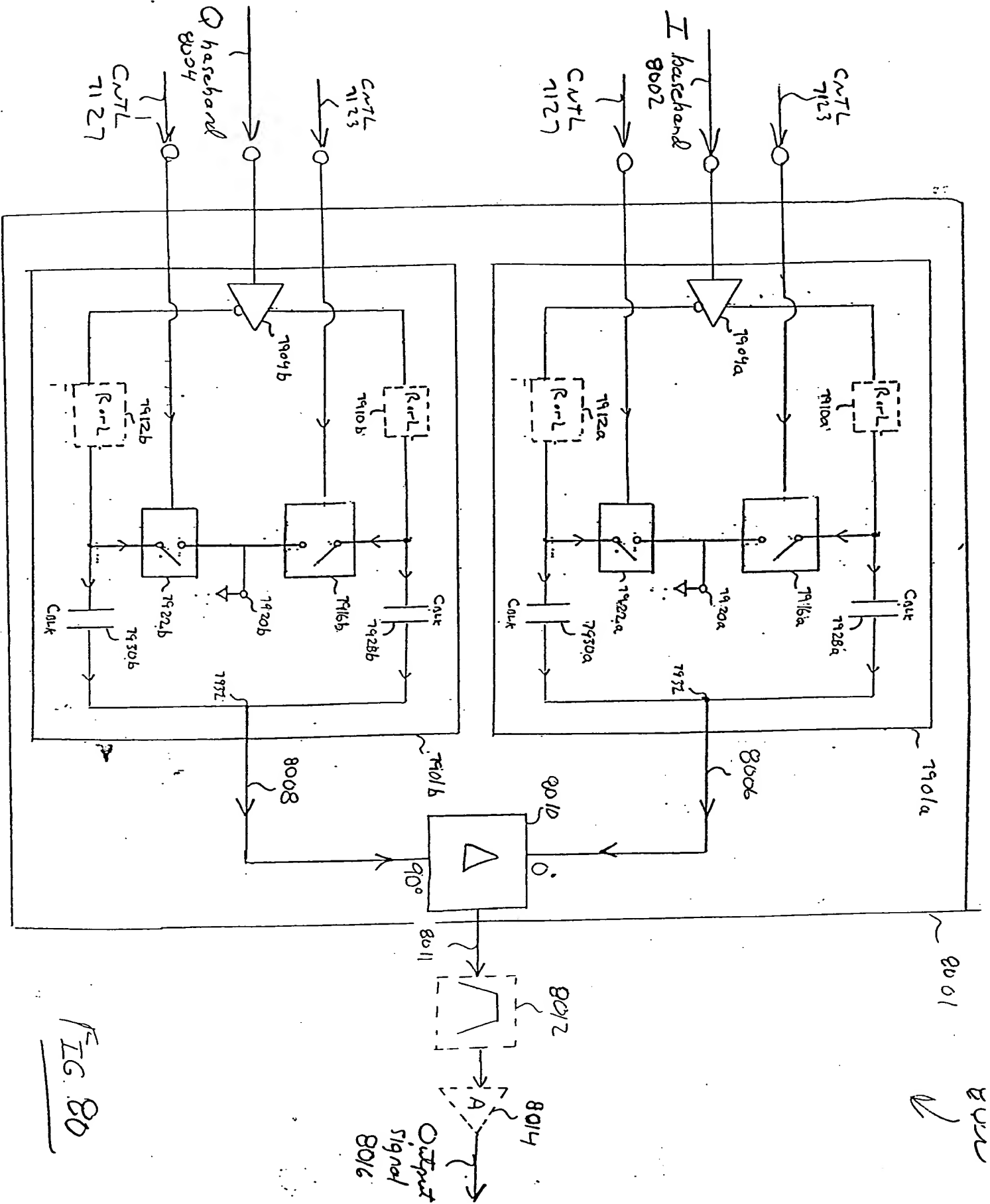
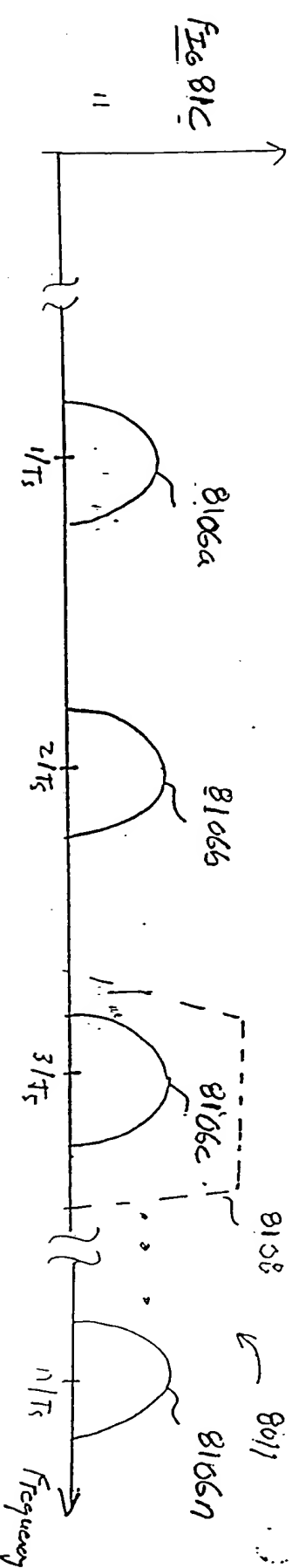
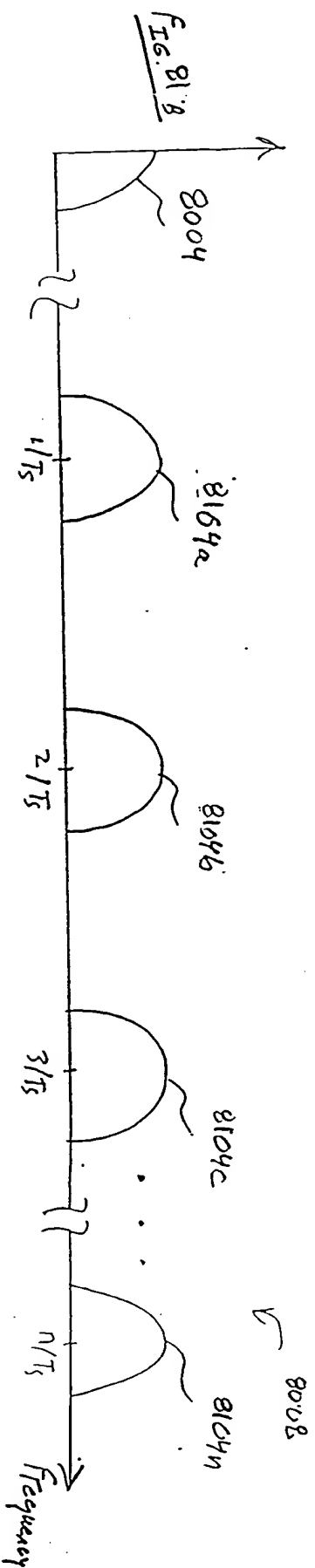
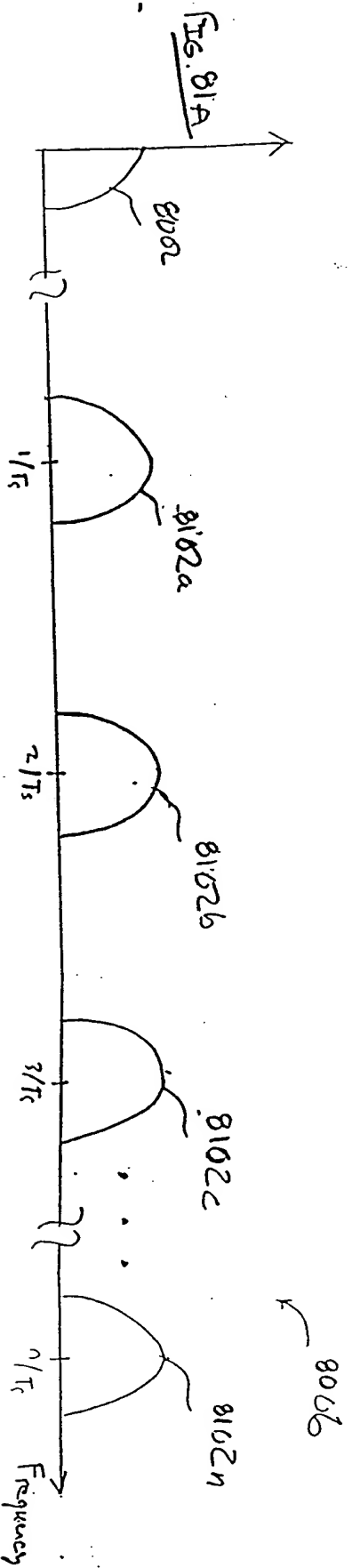


FIG. 79c







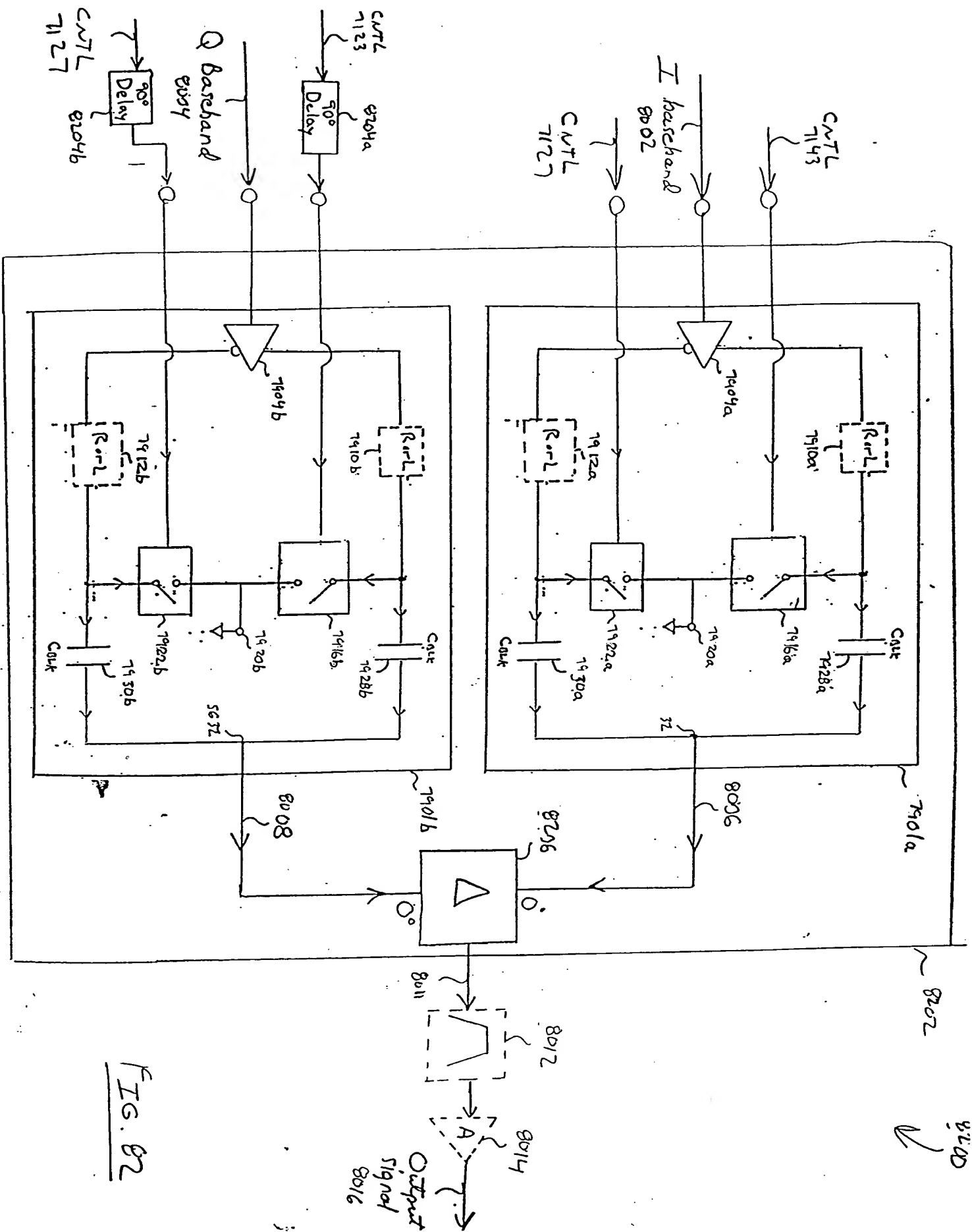


Fig. 82

8300

8302

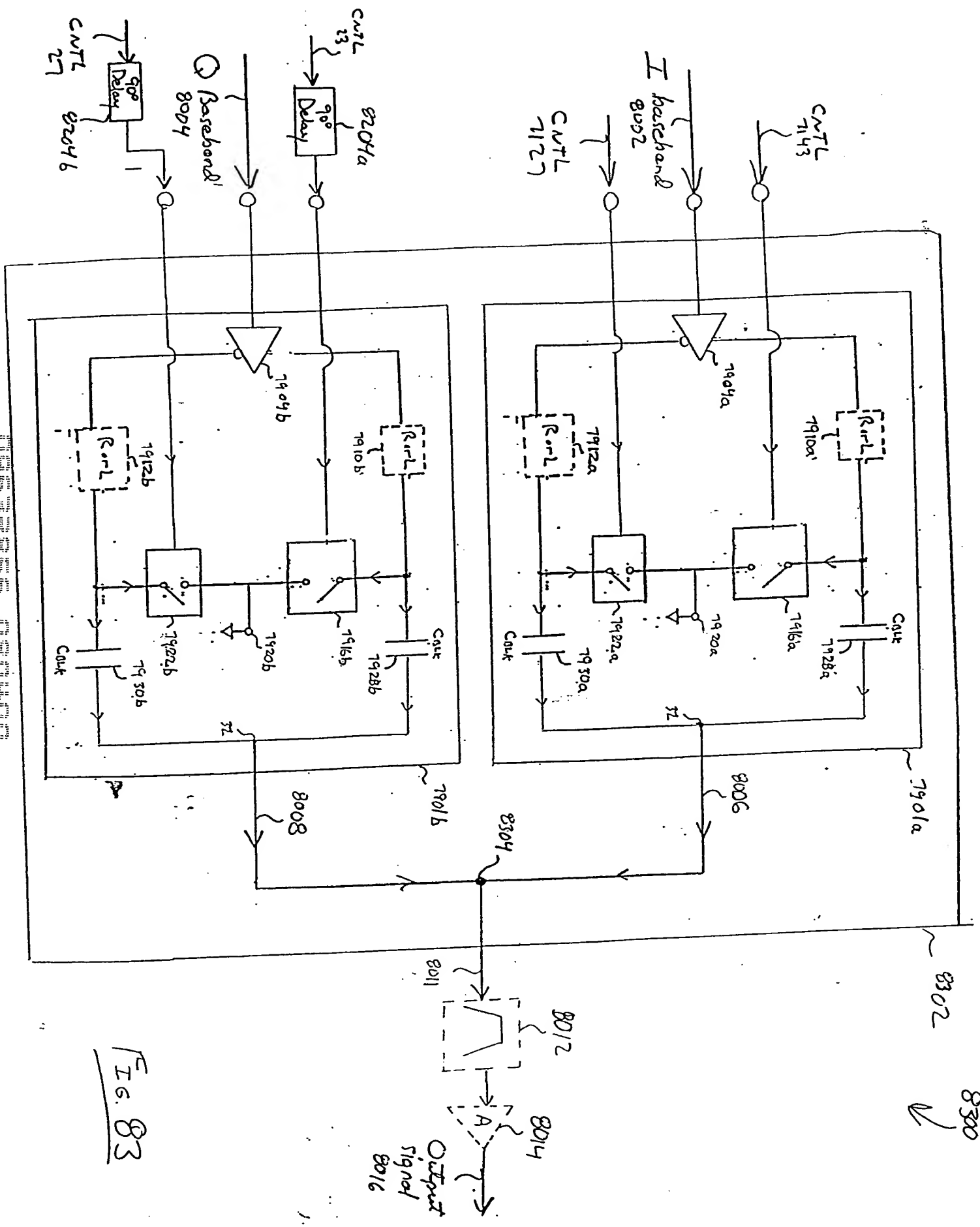


Fig. 83



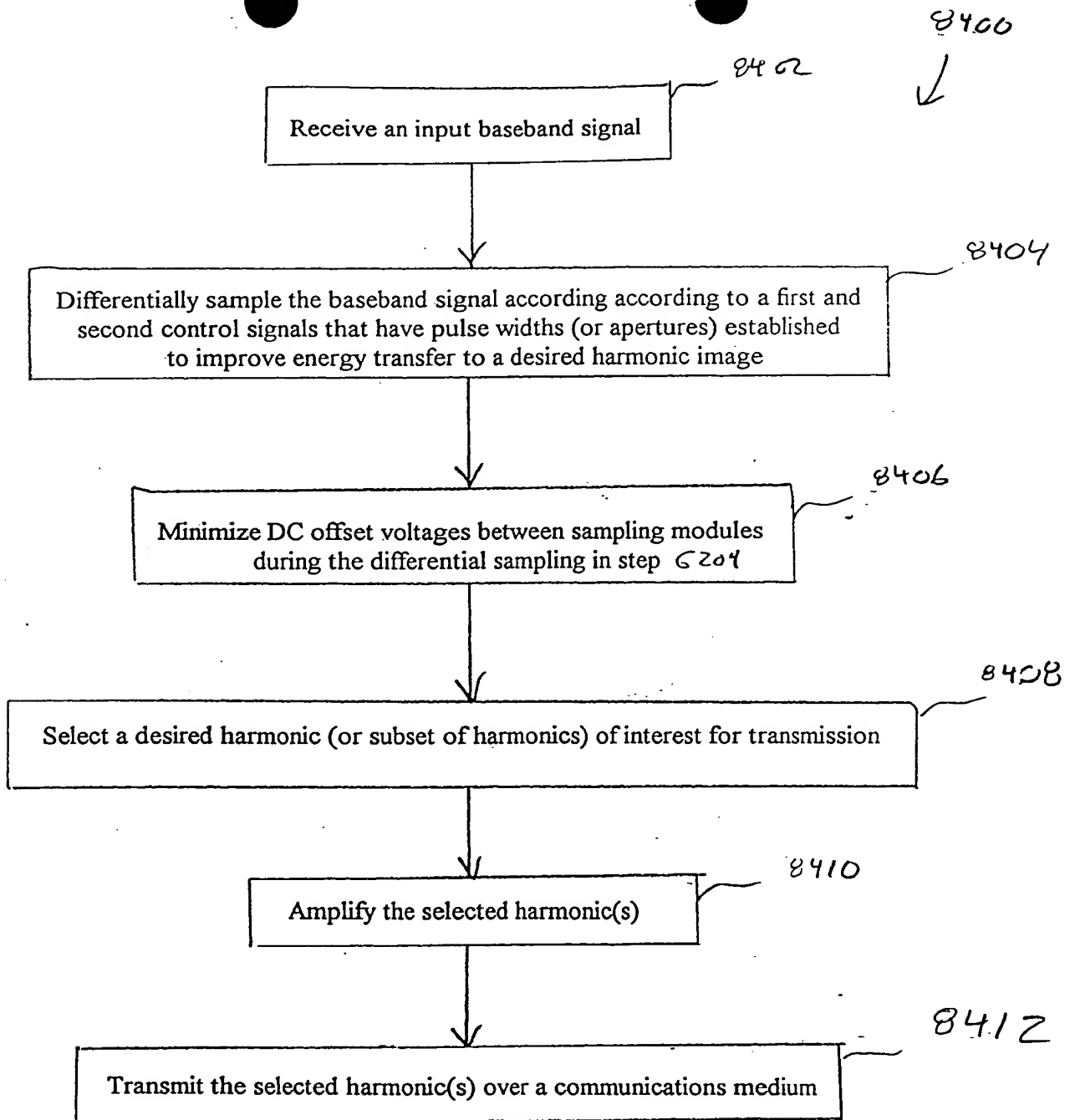


FIG. 84

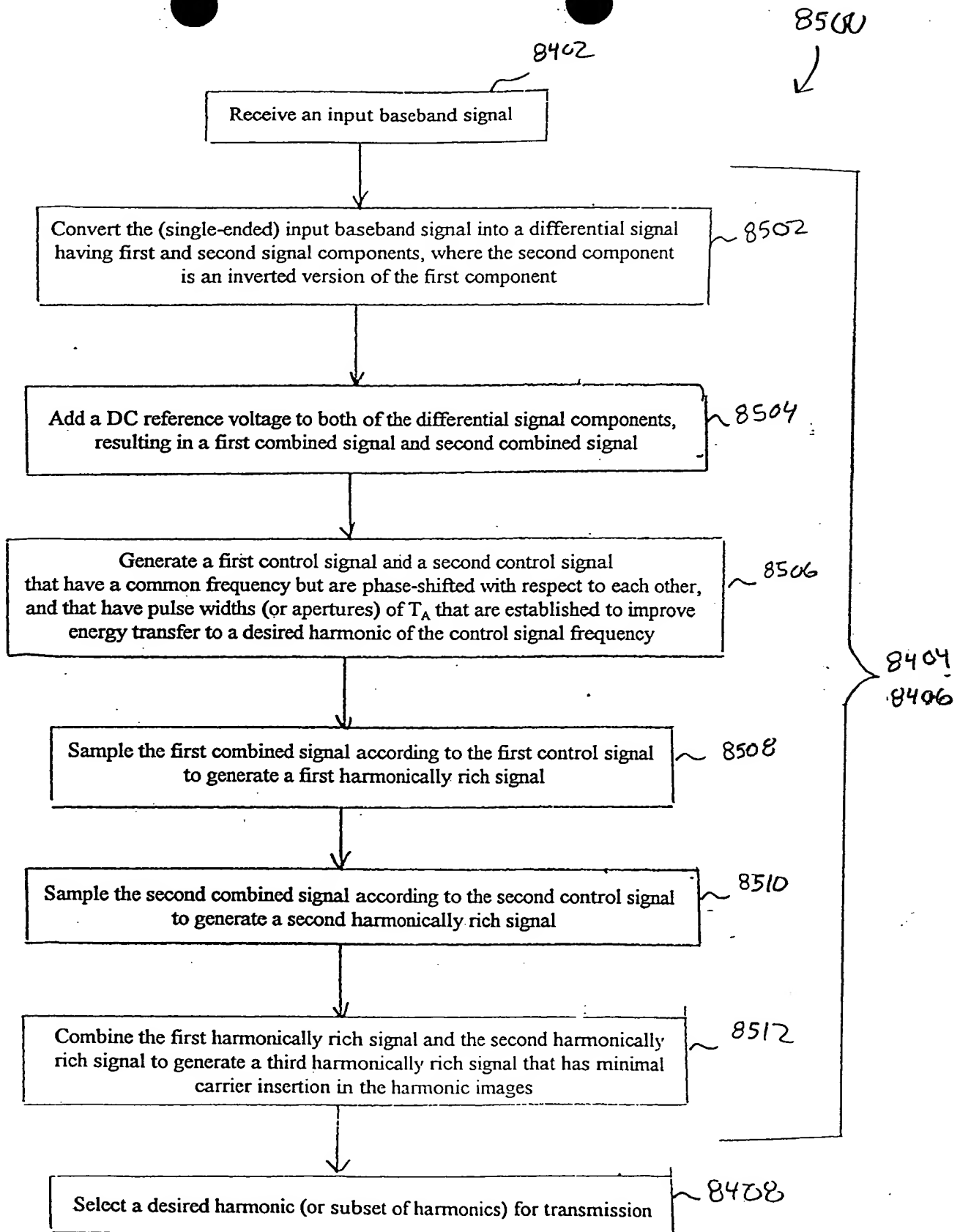


FIG. 85

8600

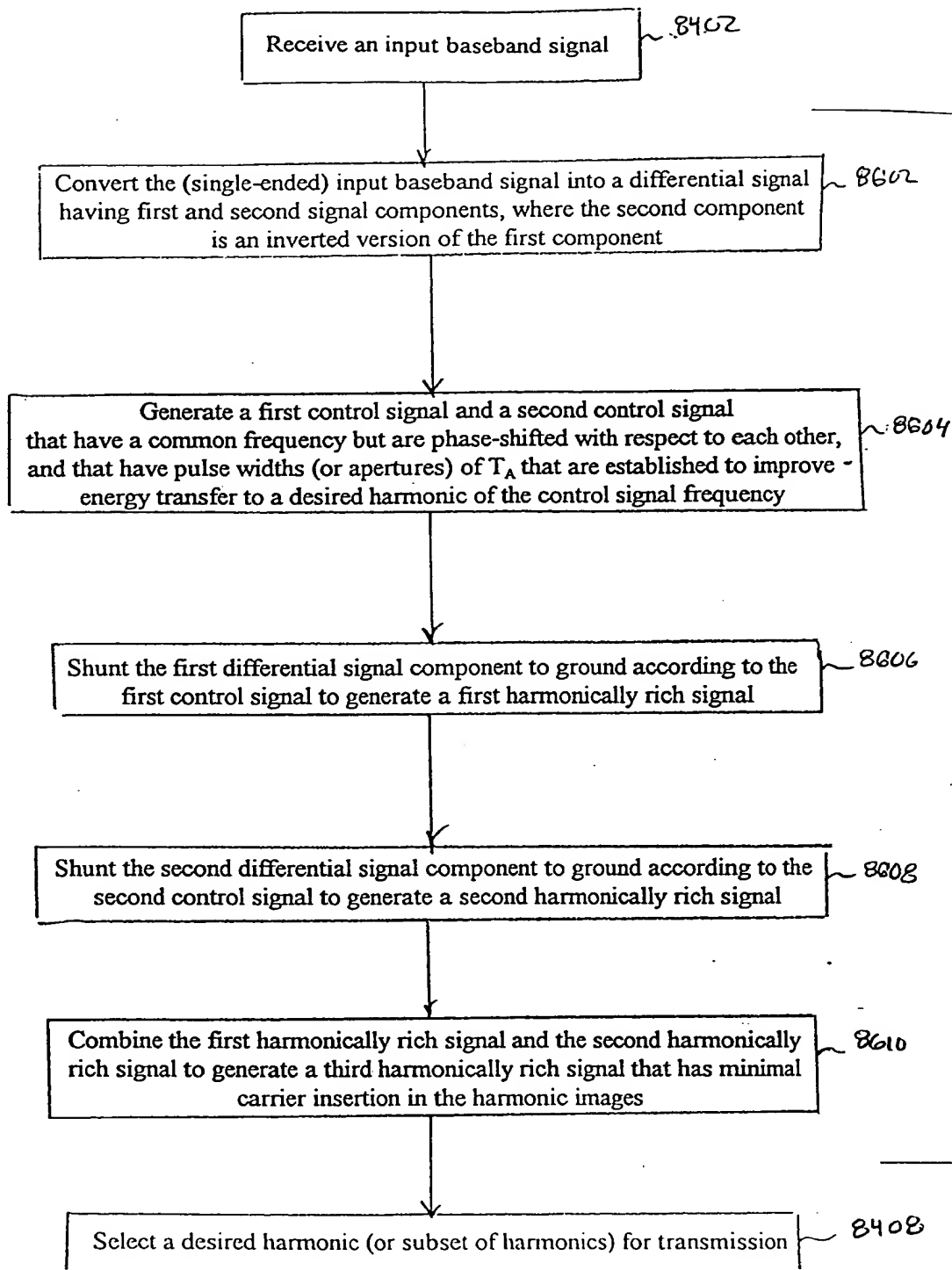


FIG. 86

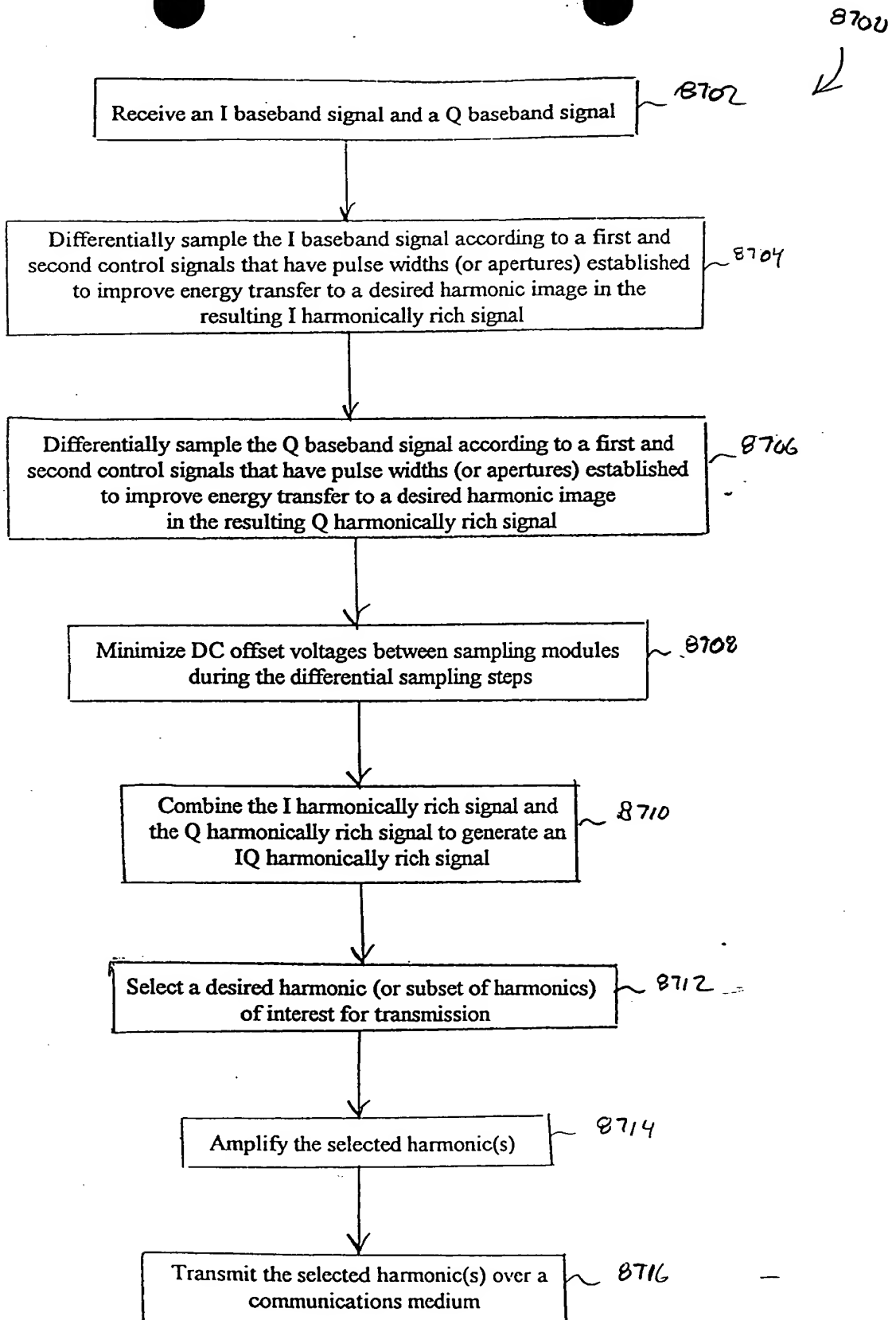
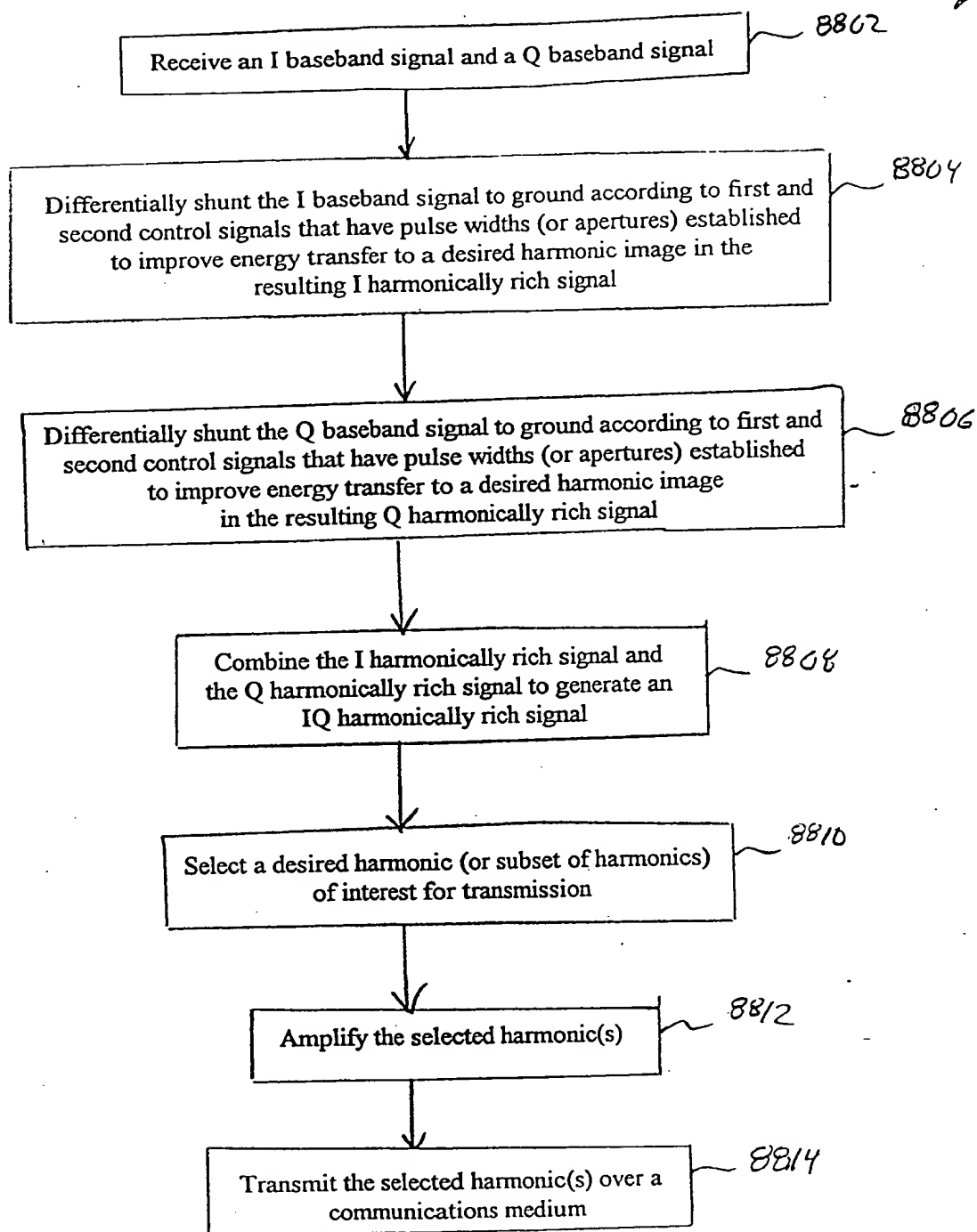


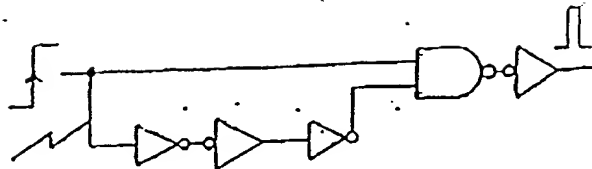
FIG. 87

8800

FIG. 88



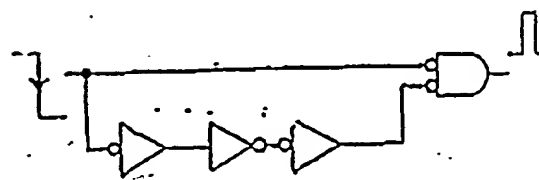
8912  
↓



A. rising edge pulse generator

FIG. 89D

8916  
↓



B. falling-edge pulse generator

FIG. 89E

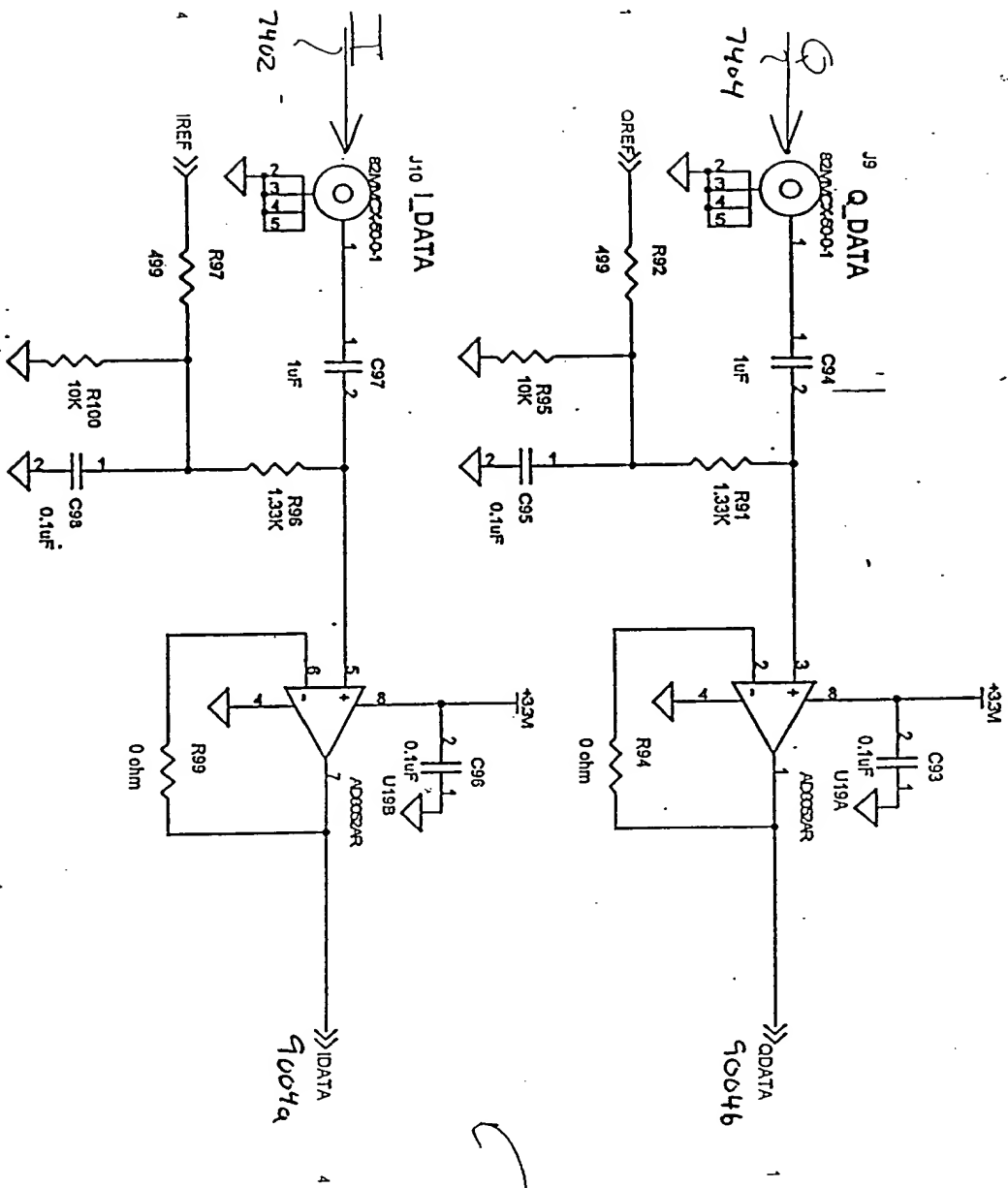


FIG. 90A



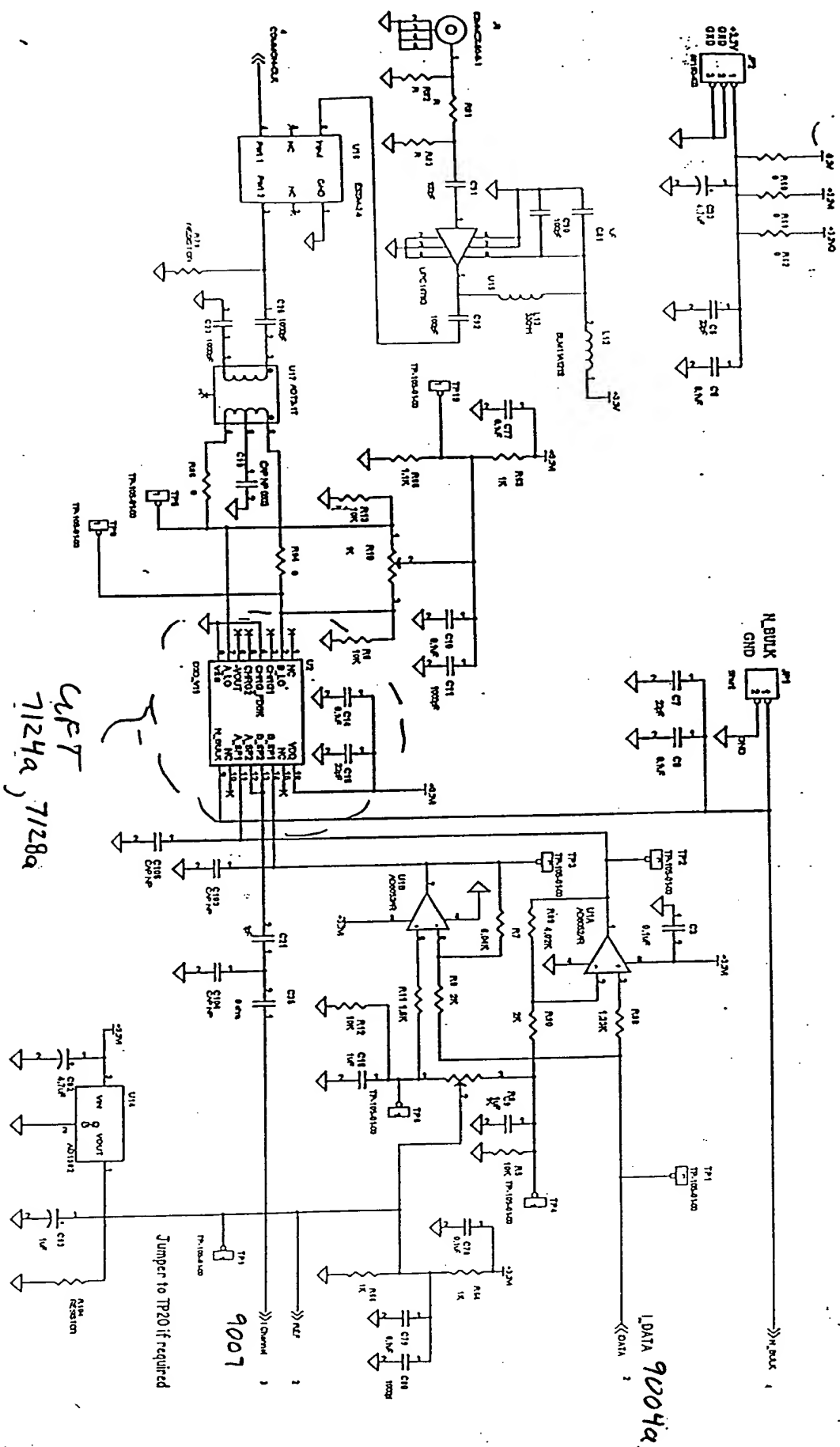


FIG. 90B

4CHT  
7124a, 7128a

4 channel  
9006

Jumper to TP20 if required

9007

LDATA 9004a



F56.90C

Q Chanel  
9008-



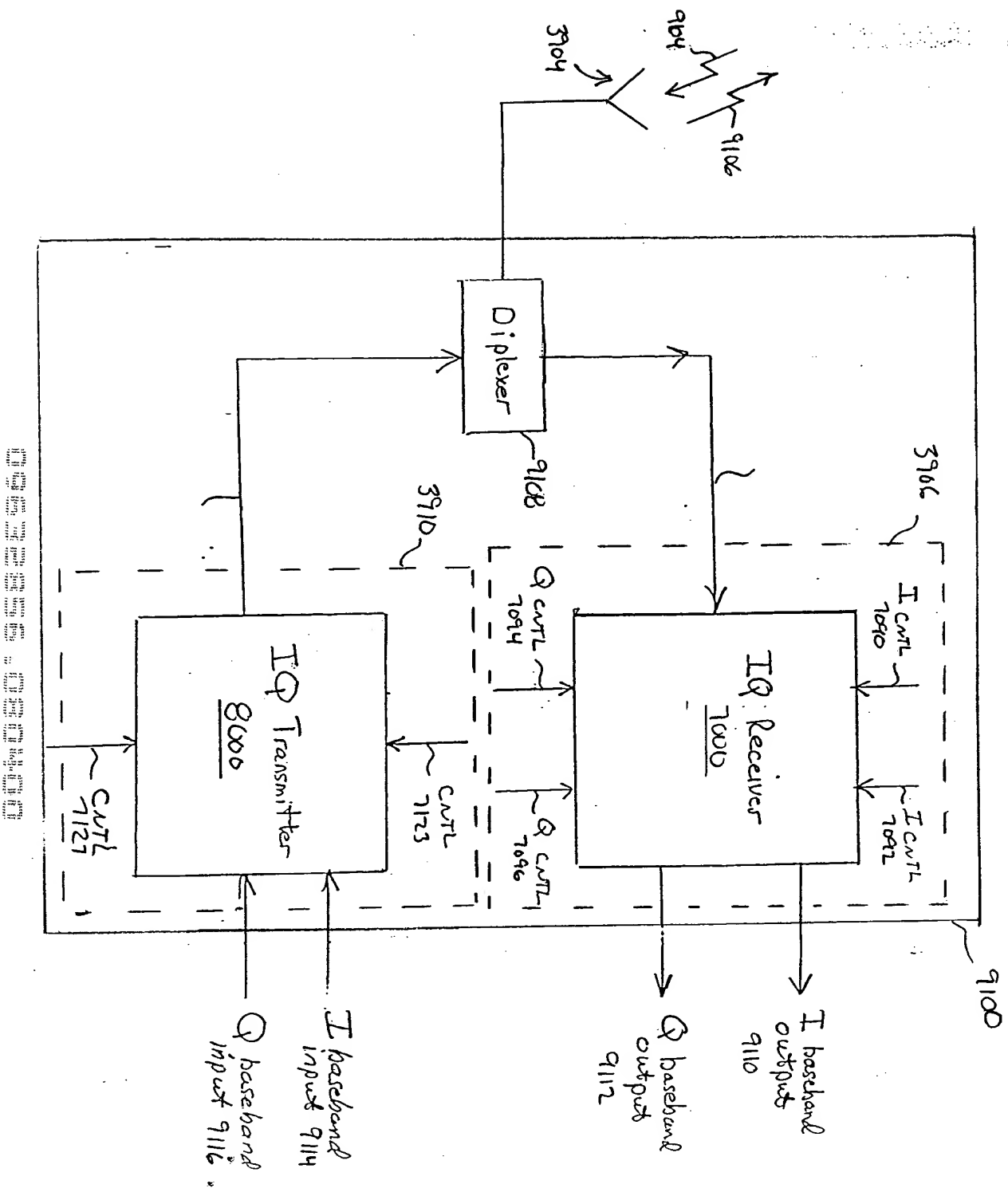
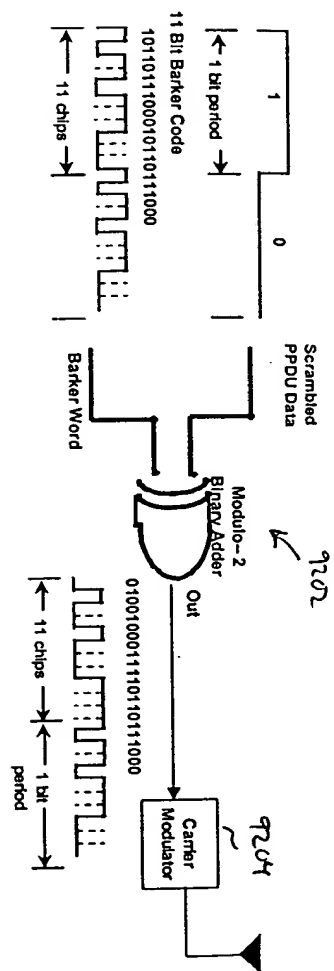
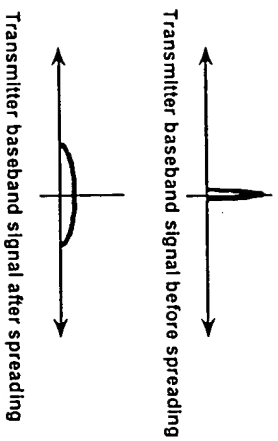


Fig. 91



### Transmit Spectrum



### Receiver Spectrum

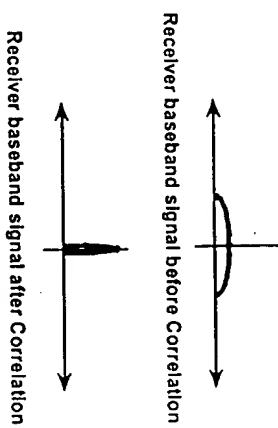


Fig 92





FIG. 95A

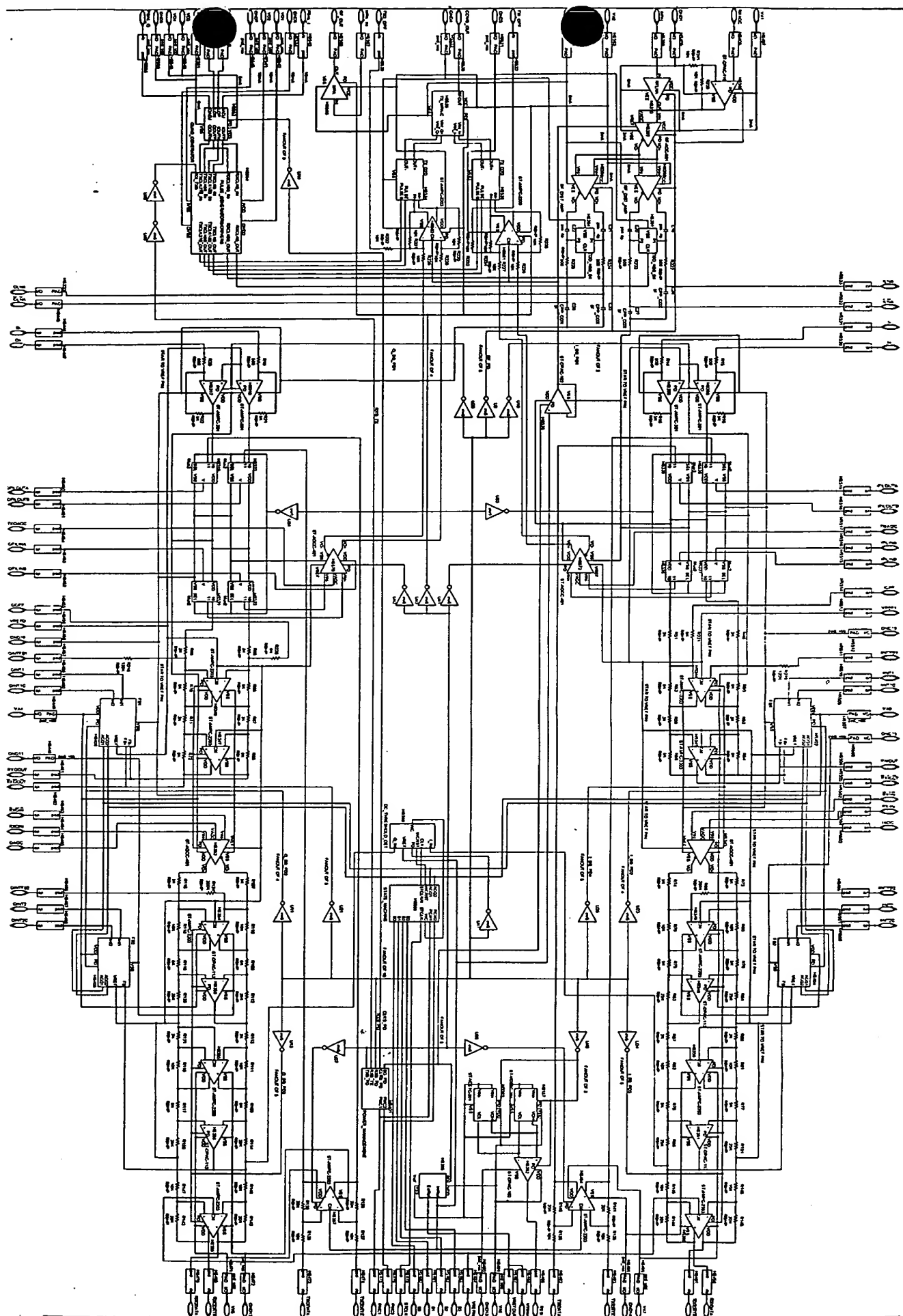


FIG. 95A





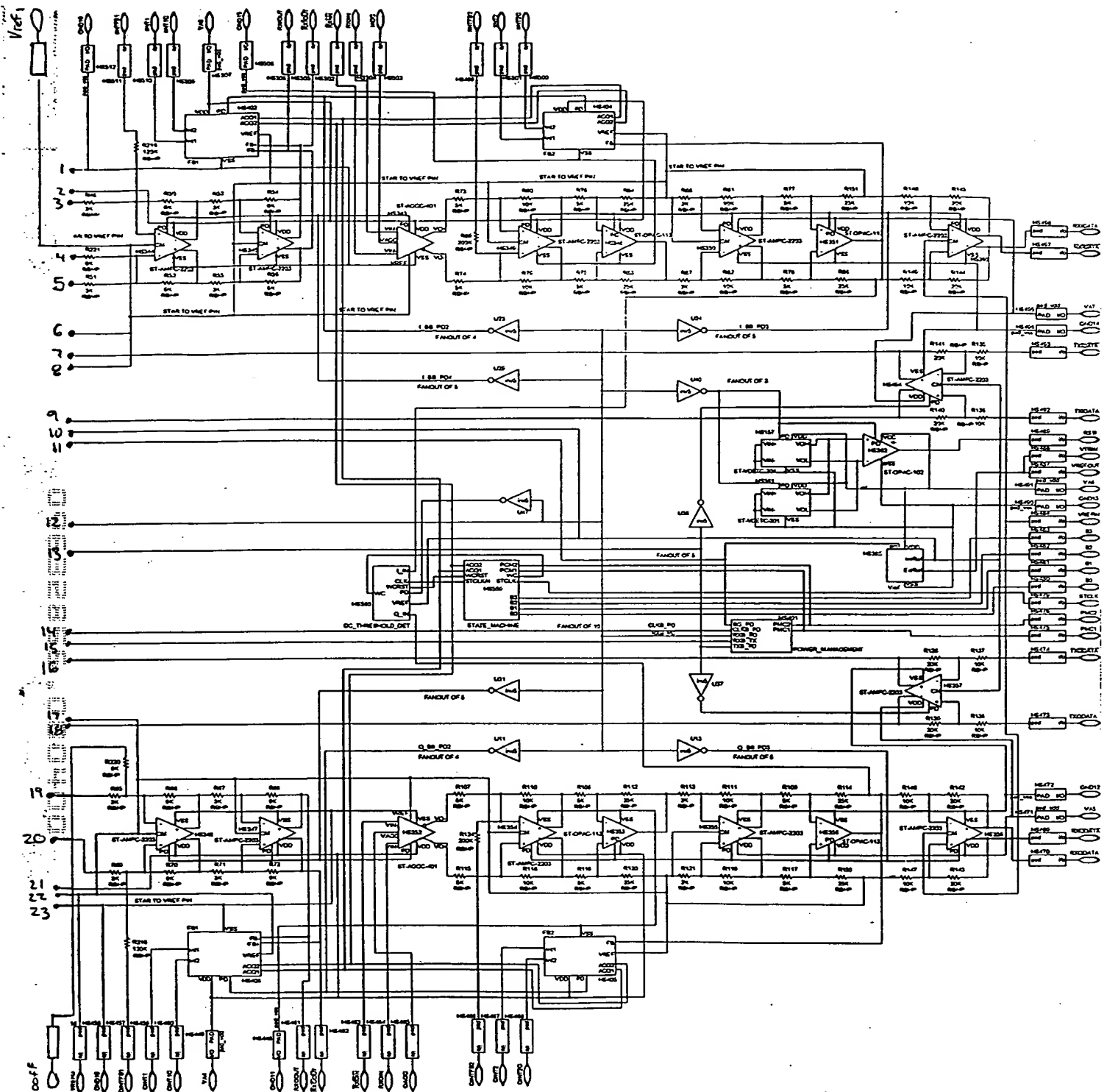


FIG. 95C



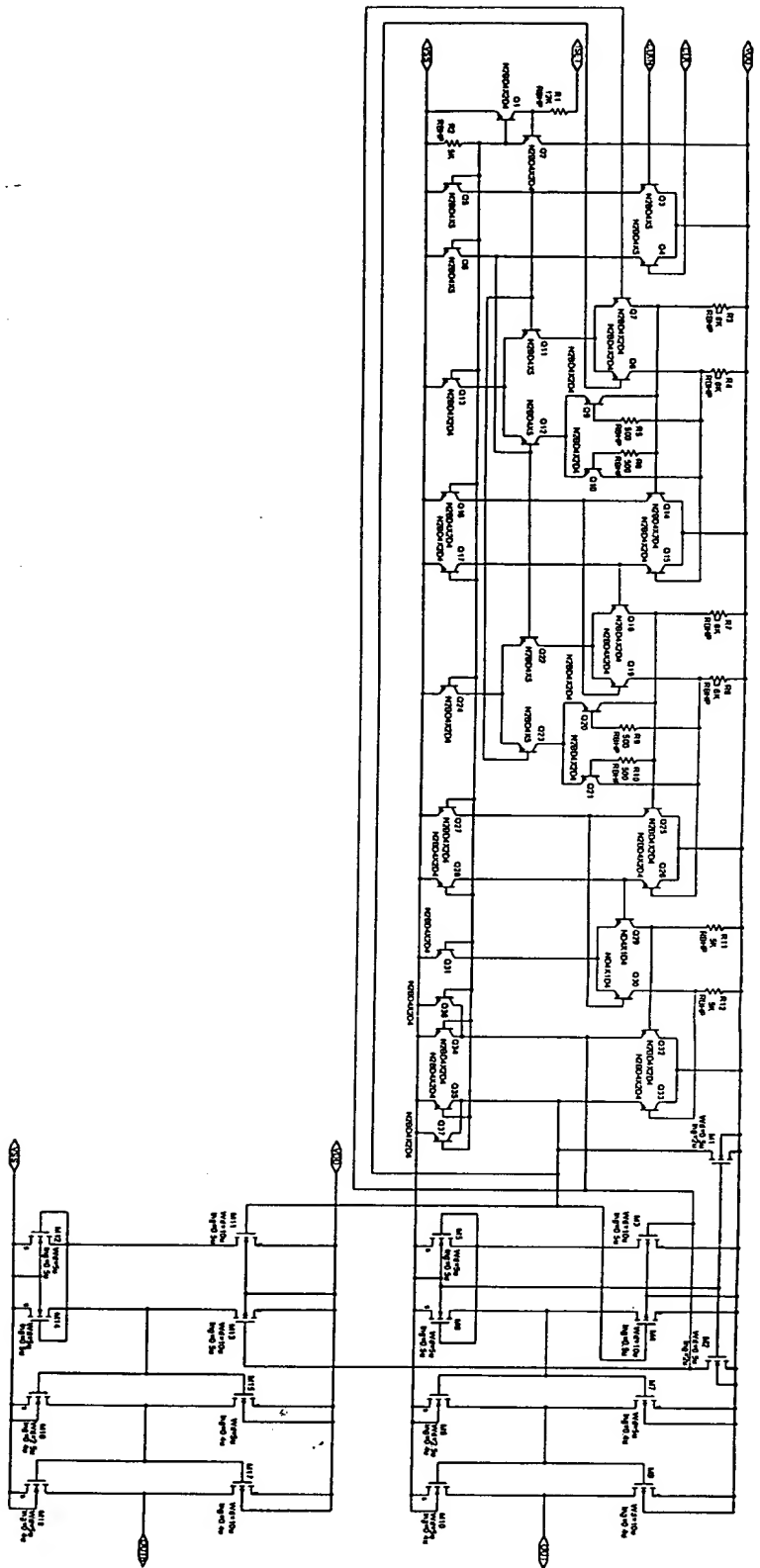


FIG. 77

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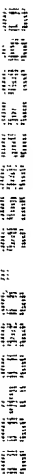


Fig. 98

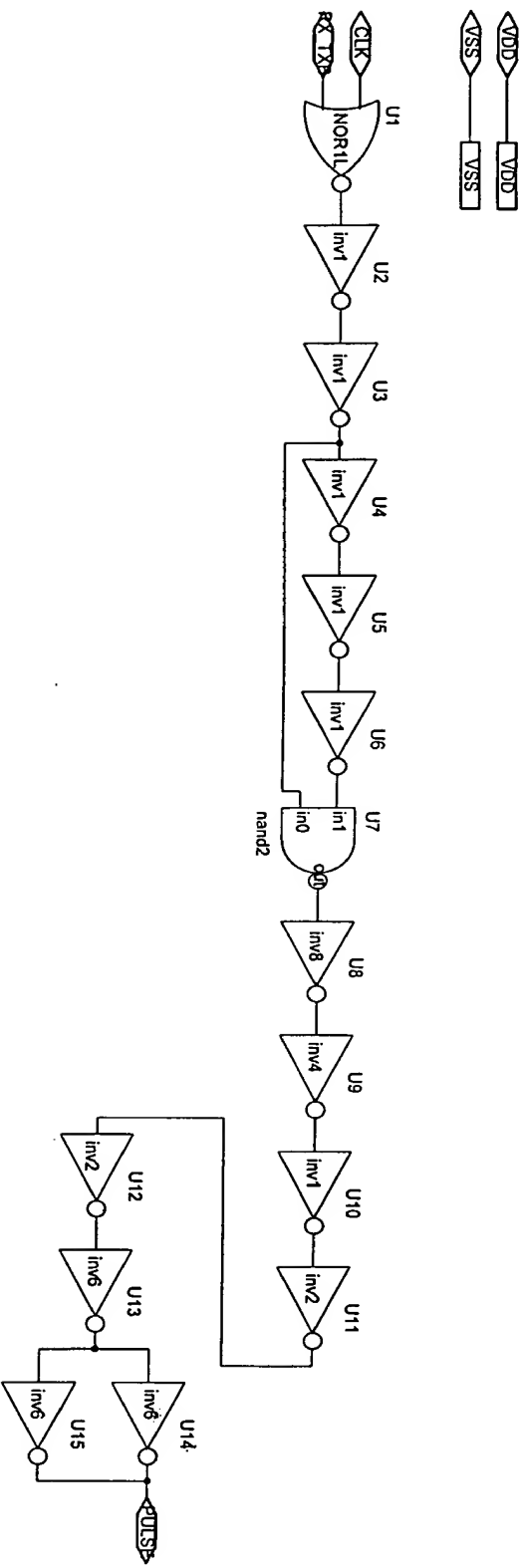


Fig. 99

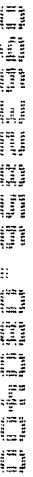


FIG. 10

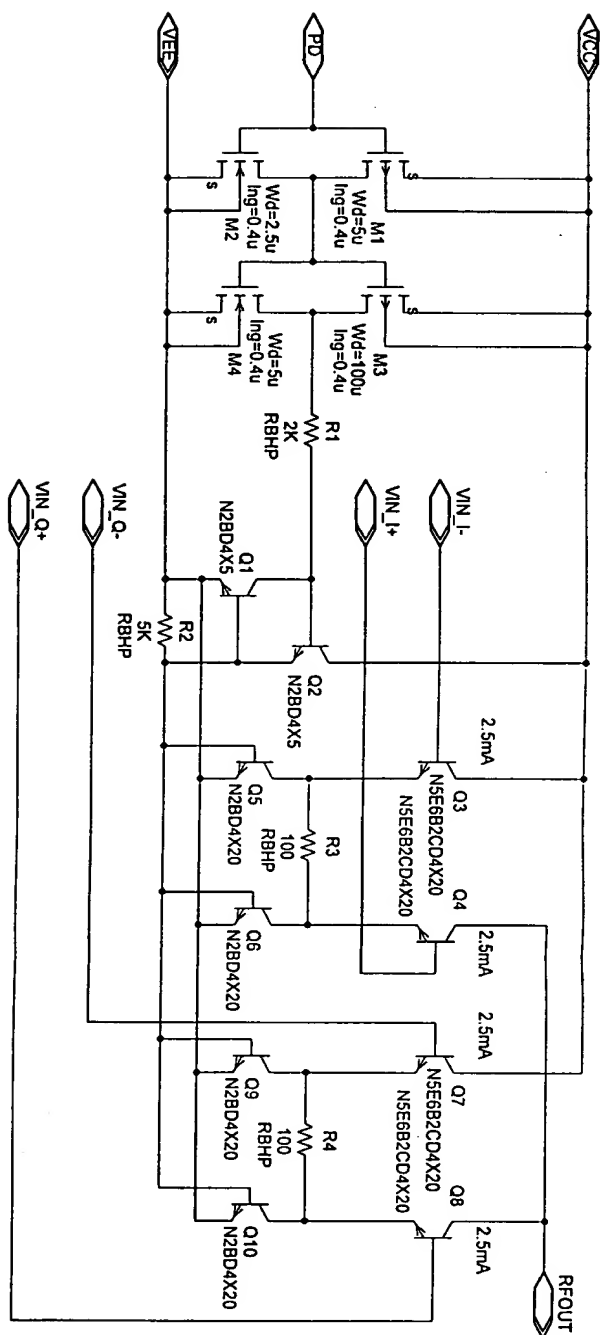


FIG. 101



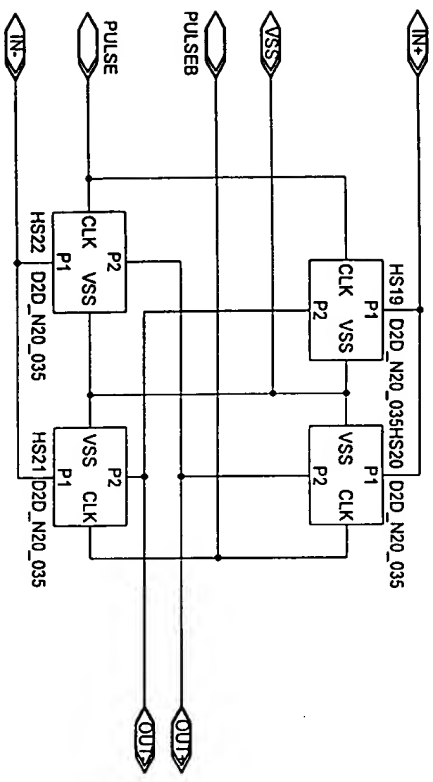


FIG. 102

FIG. 102 is a schematic diagram of a differential signal processing circuit. The circuit includes four comparators arranged in a crossbar configuration. The inputs are labeled IN+, IN-, PULSE, and VSS. The outputs are labeled OUT+ and OUT-.

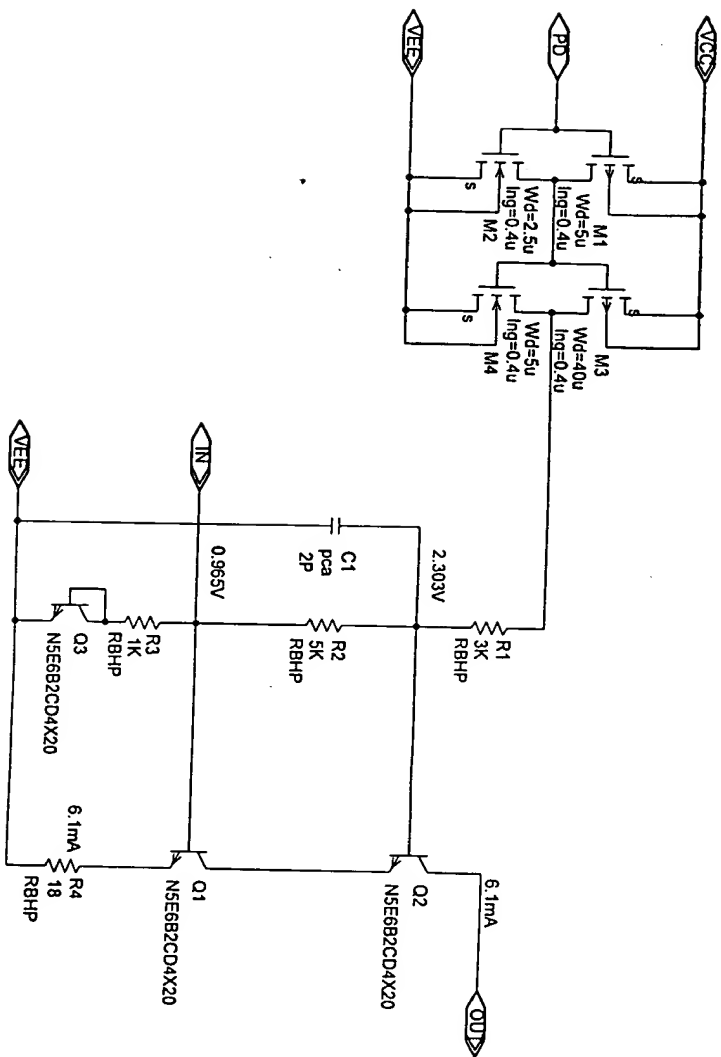
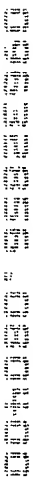


FIG. 103



File 104

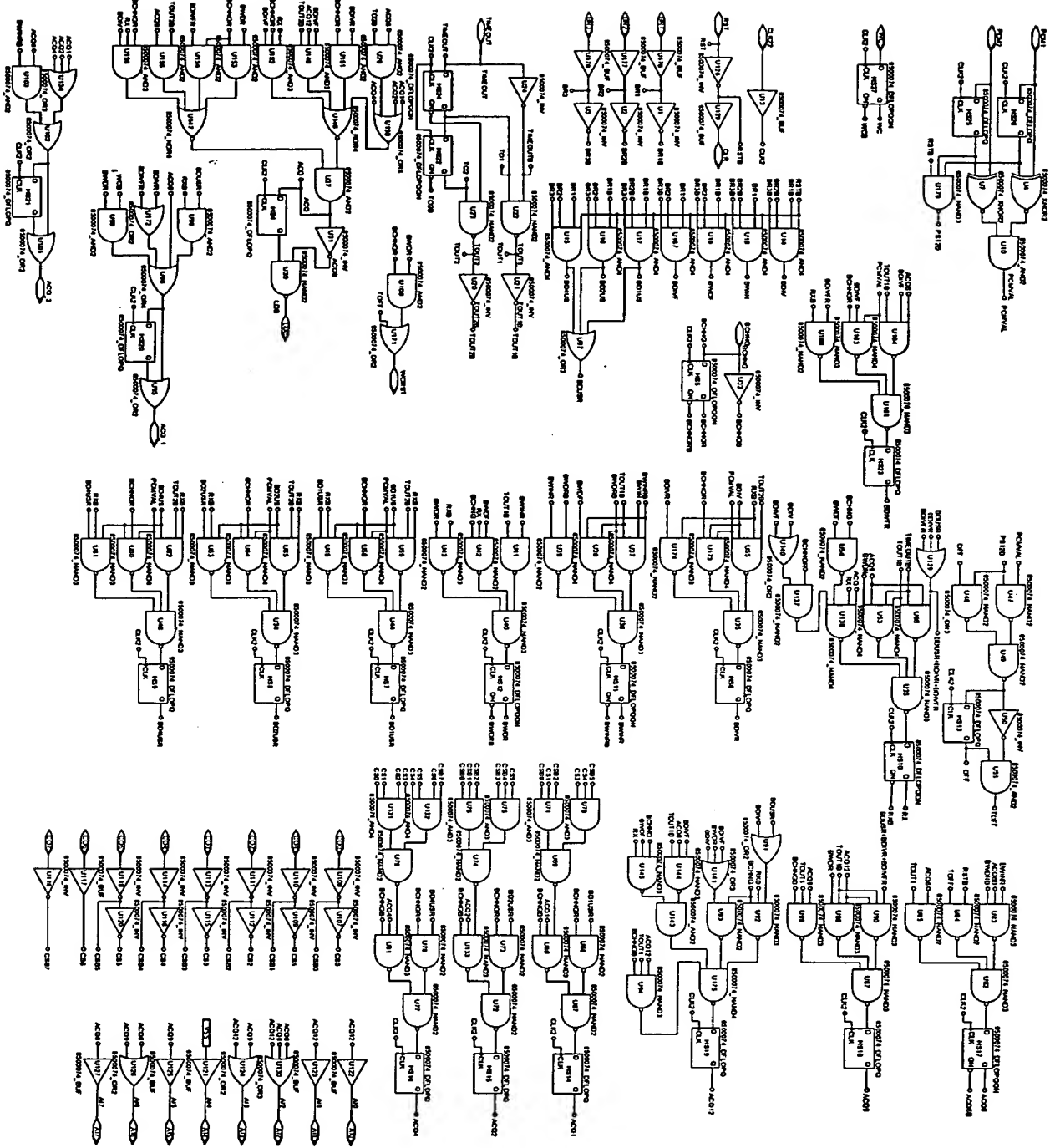


FIG. 105

FIG. 105 is a schematic diagram of a digital logic circuit, showing a complex arrangement of logic gates, flip-flops, and multiplexers, all interconnected to form a functional digital system.



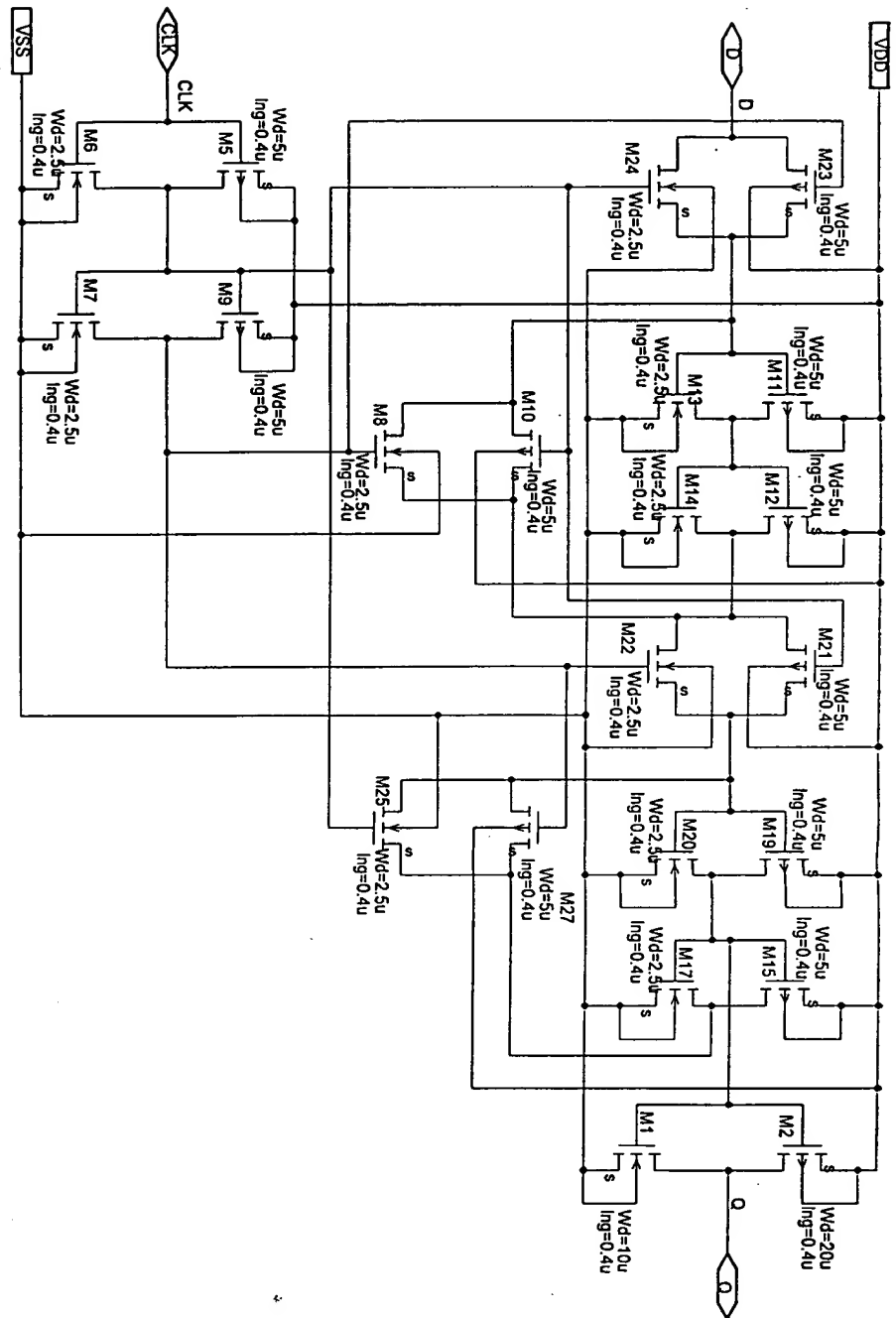
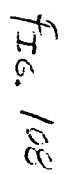


FIG. 107



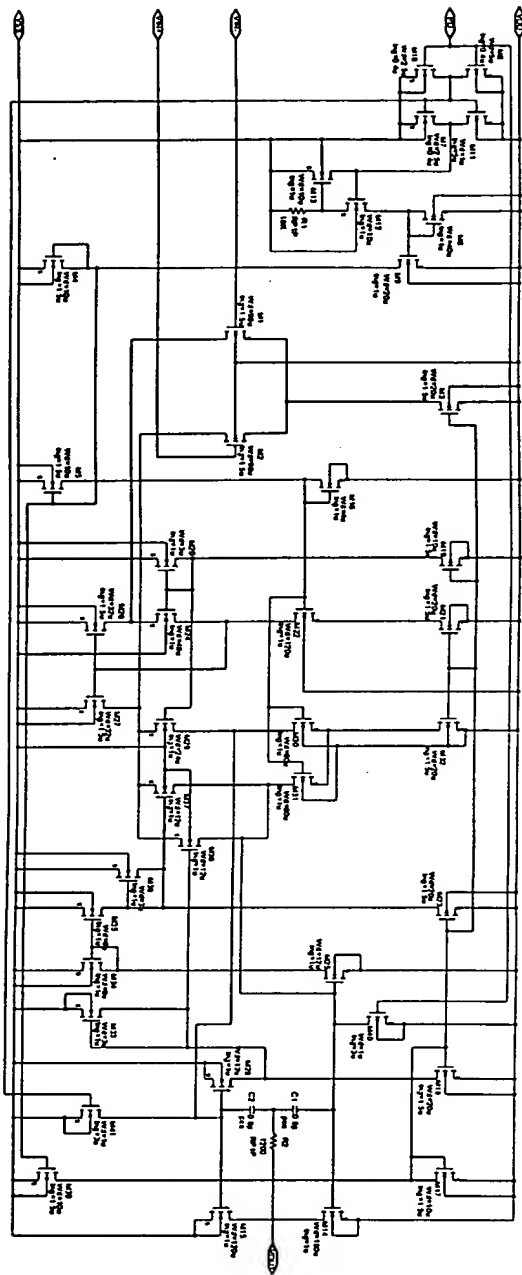


Fig. 109

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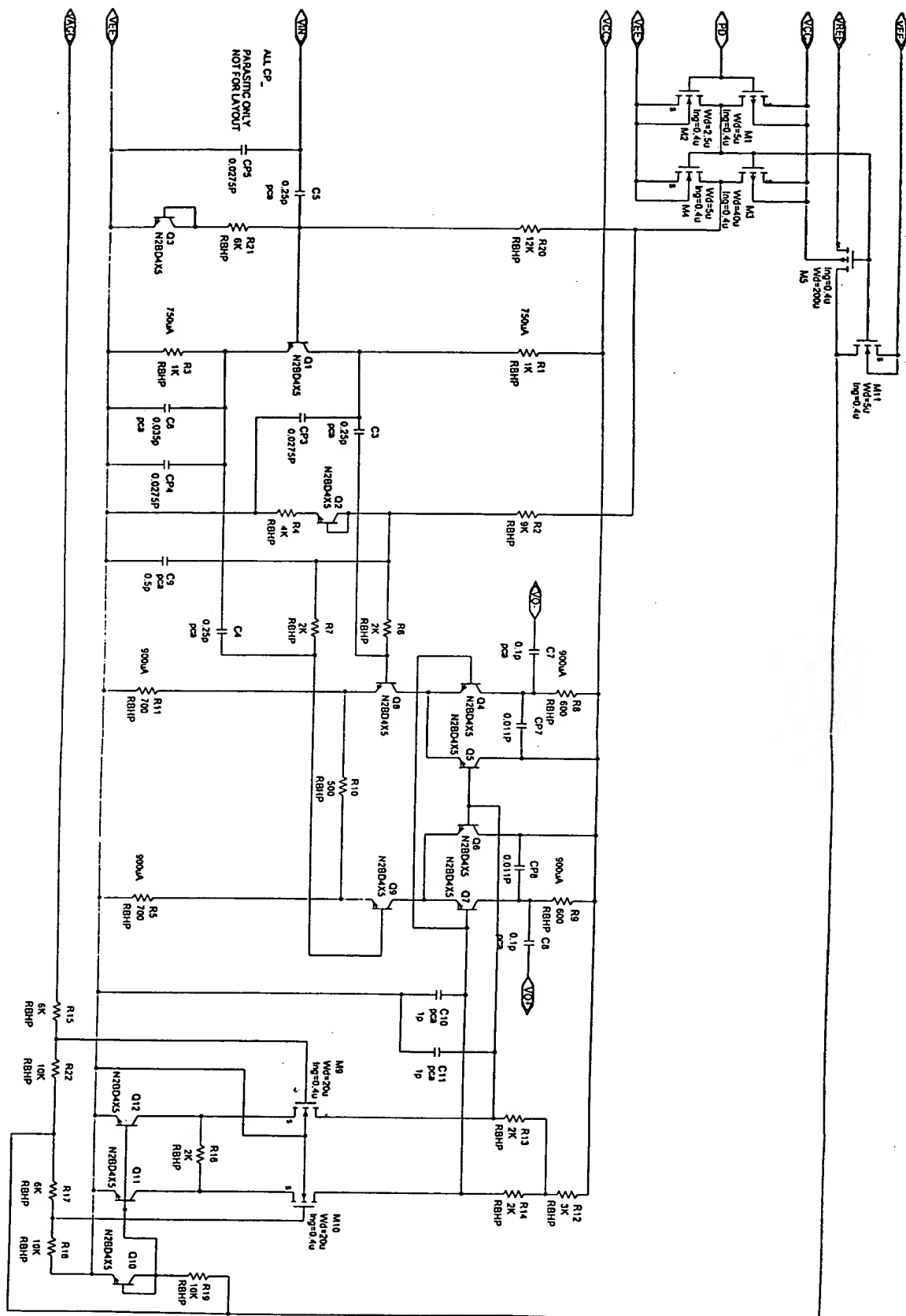
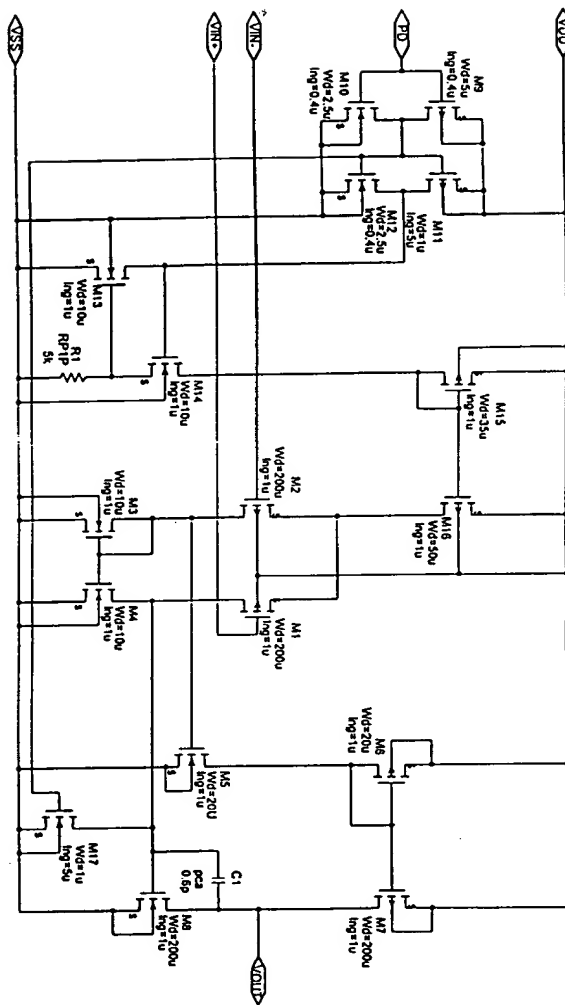


Fig. 110





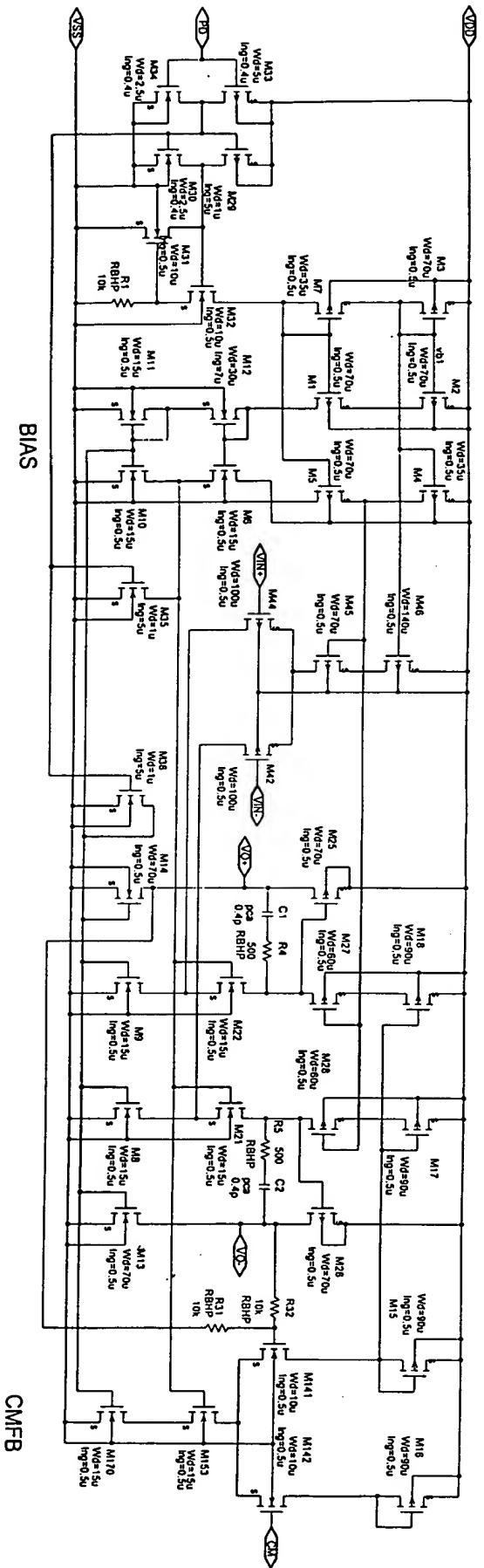


Fig. 113

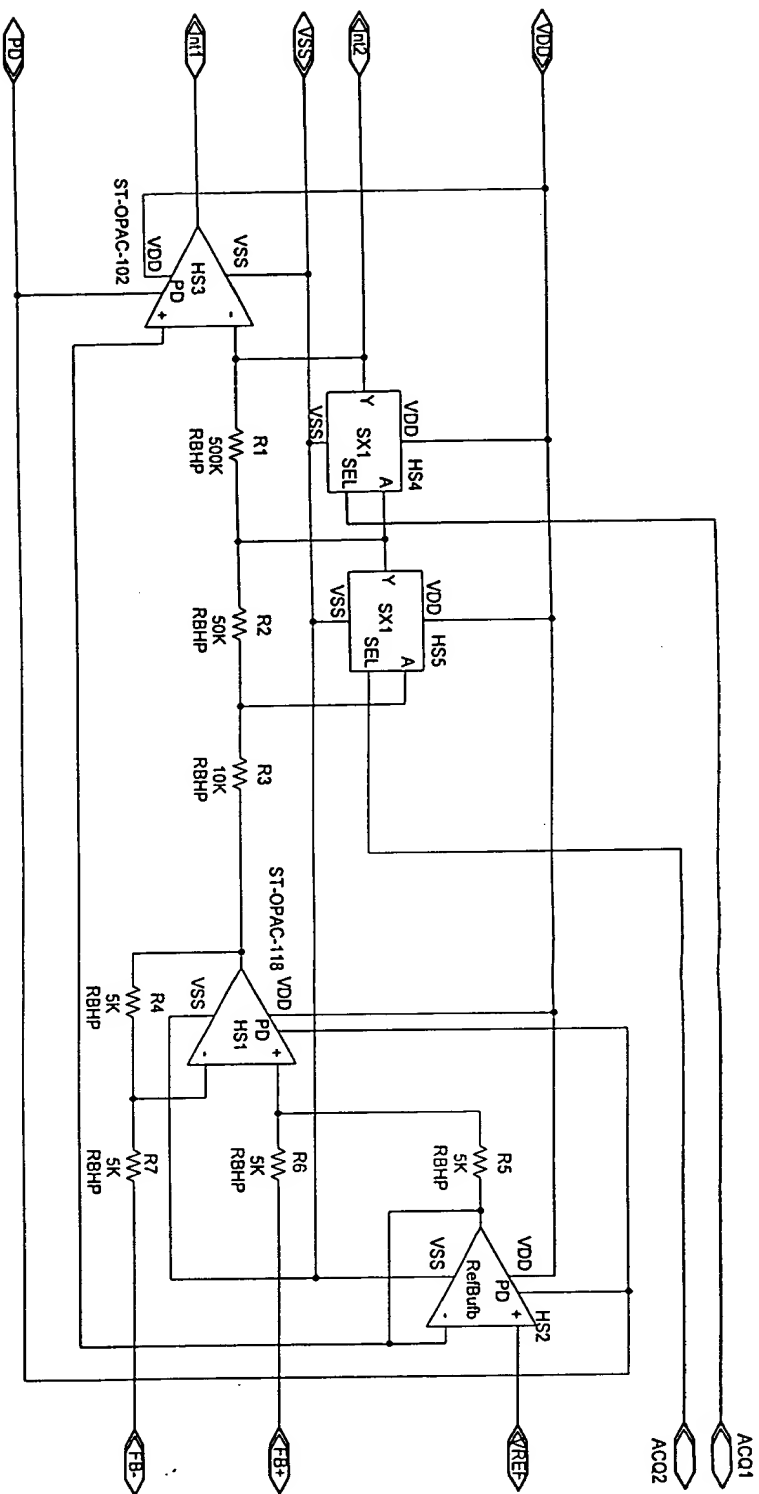


FIG. 114

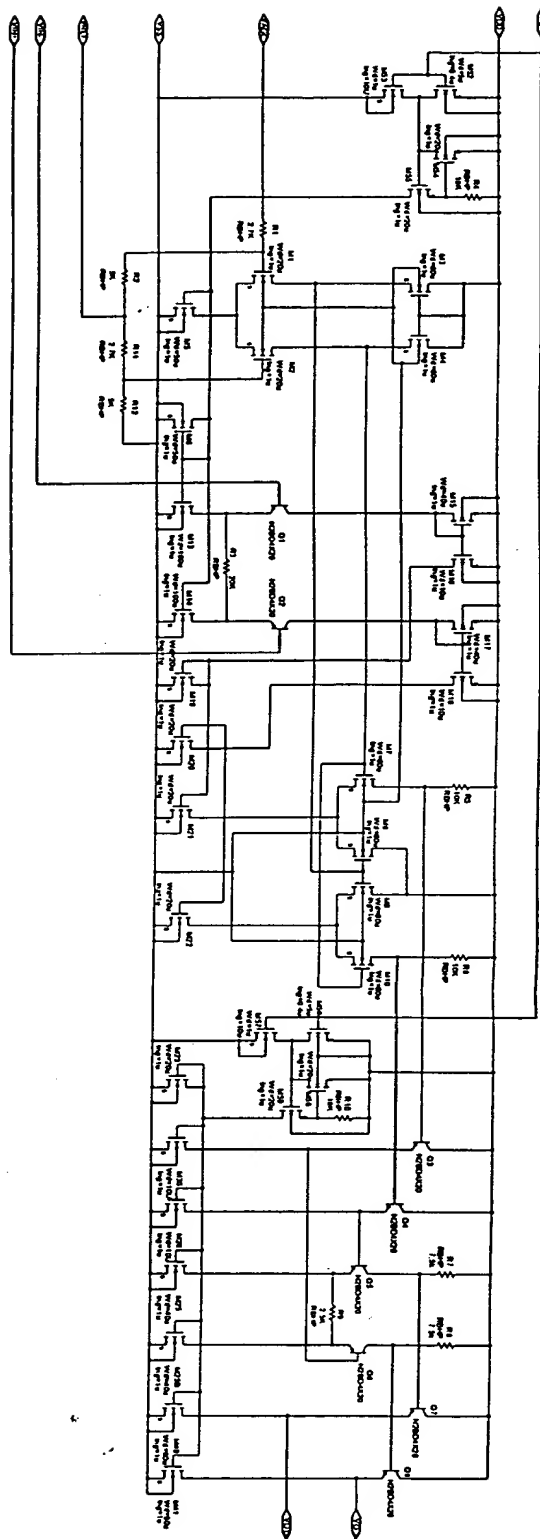


Fig. 115

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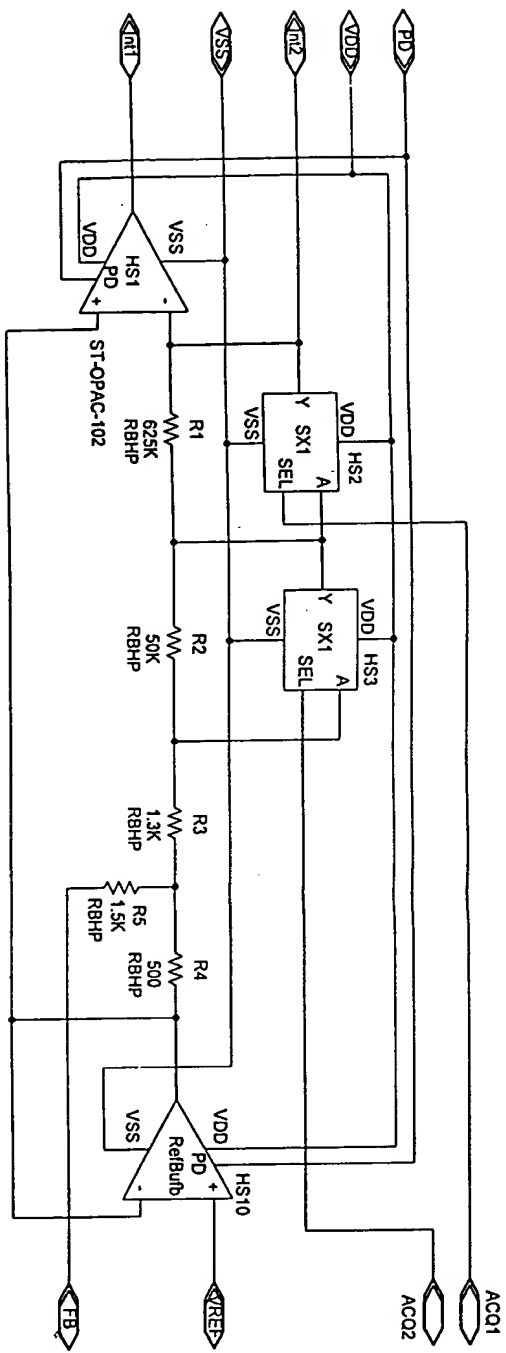


FIG. 116

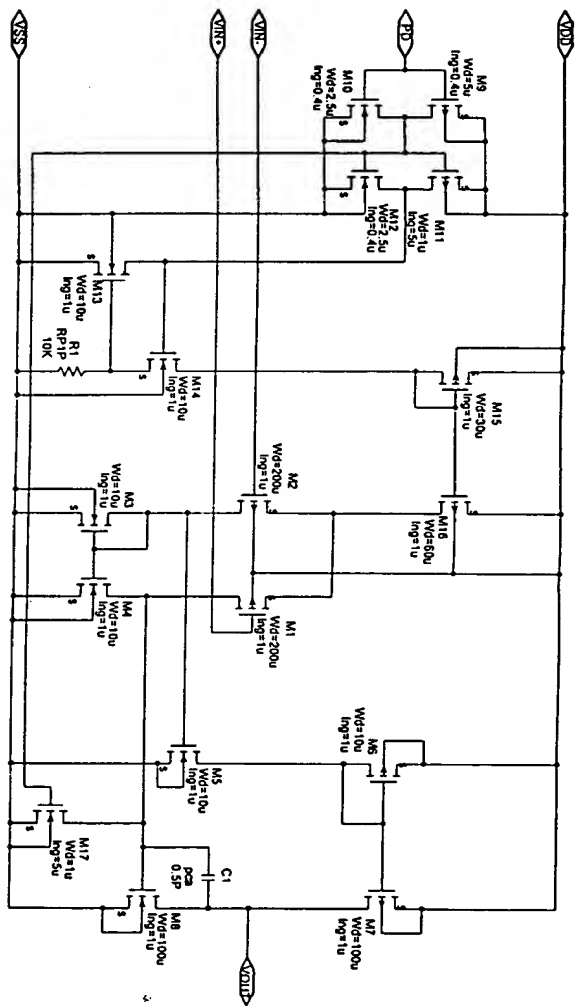
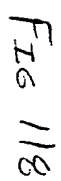
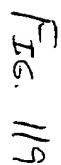


FIG. 117



[illegible]

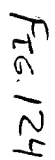


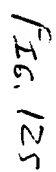






[illegible]

[illegible]





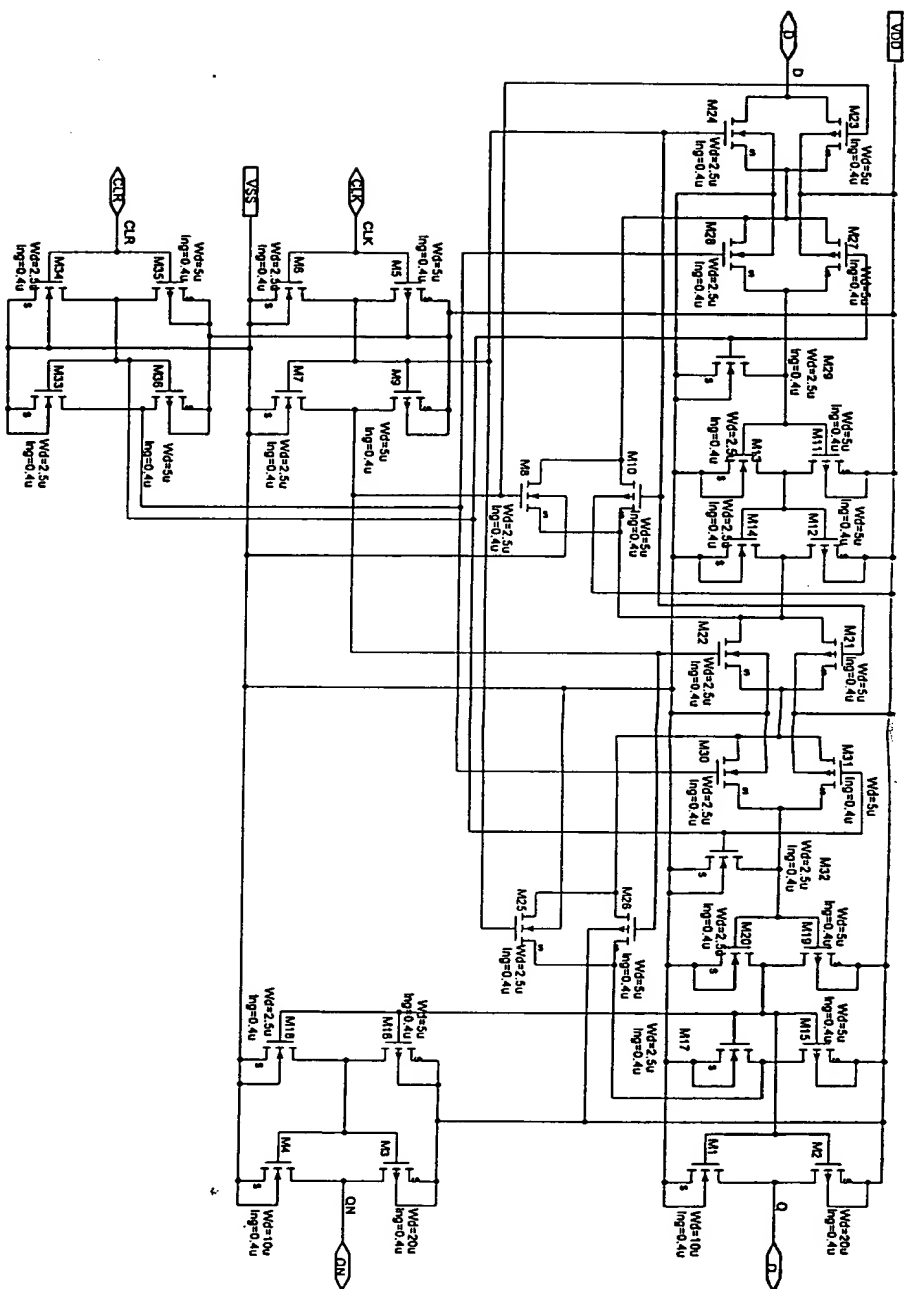


Fig 126



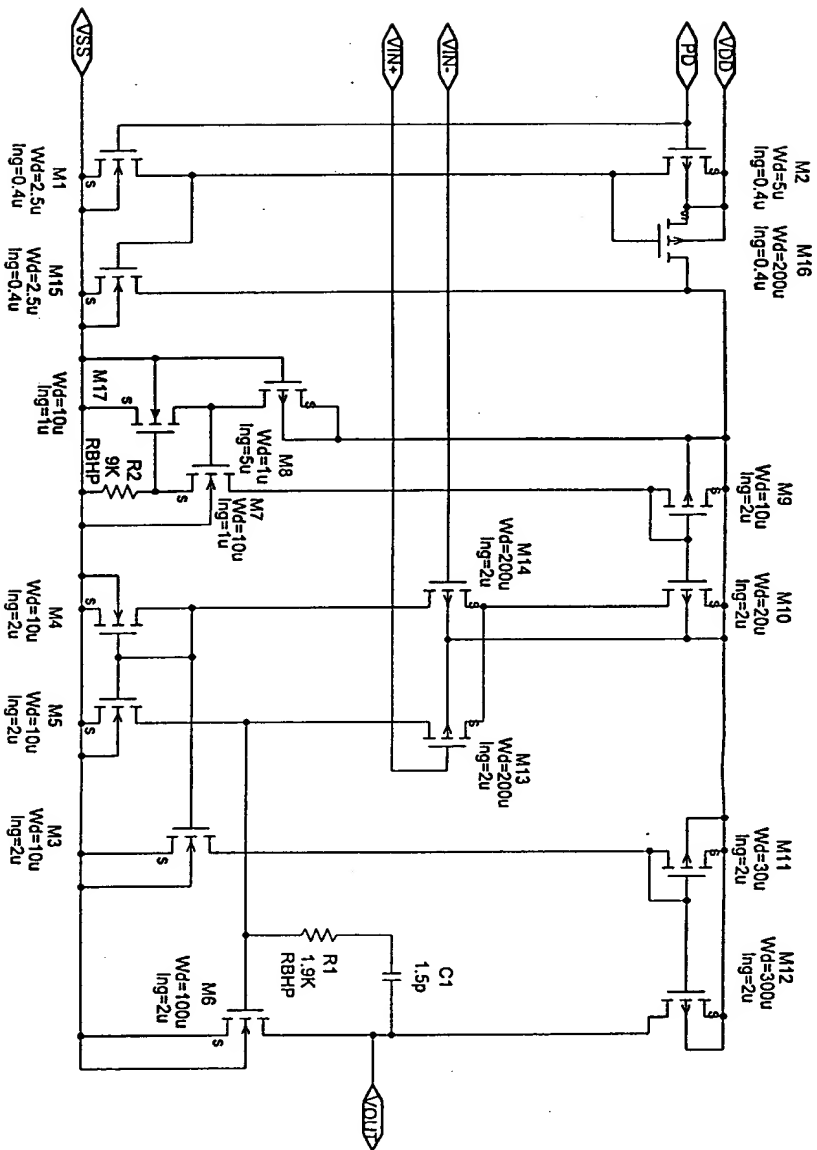
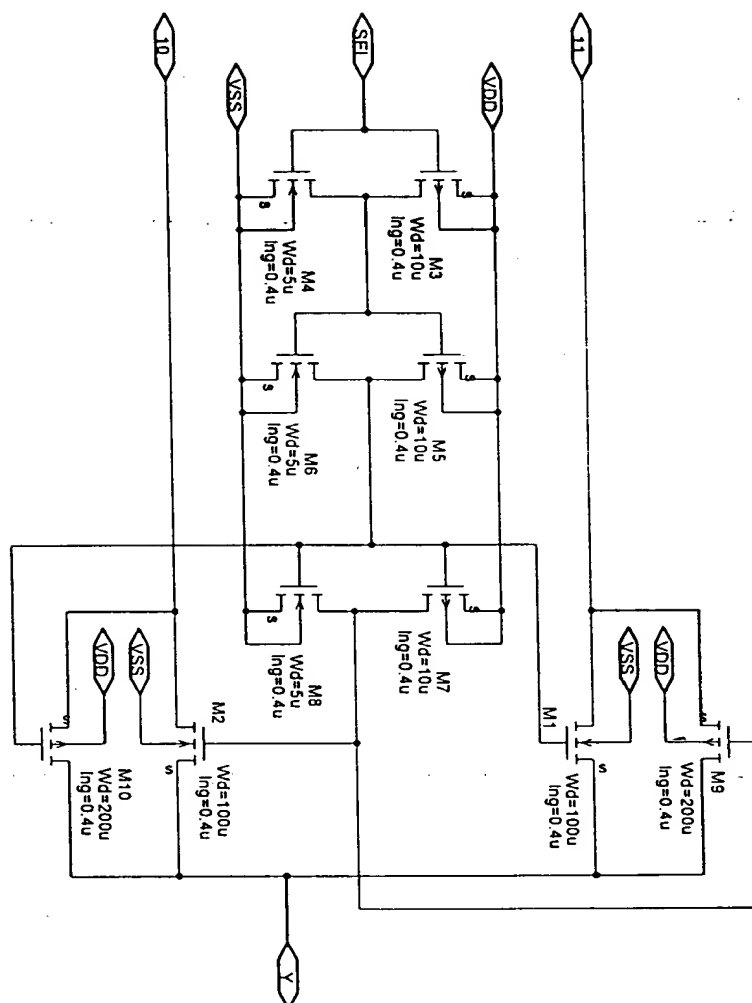


Fig. 128





Fe 130

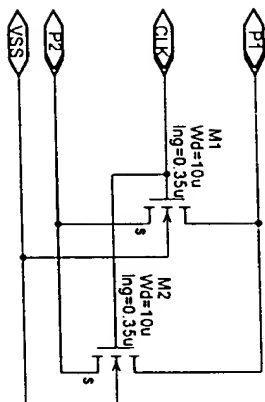


Fig. 131



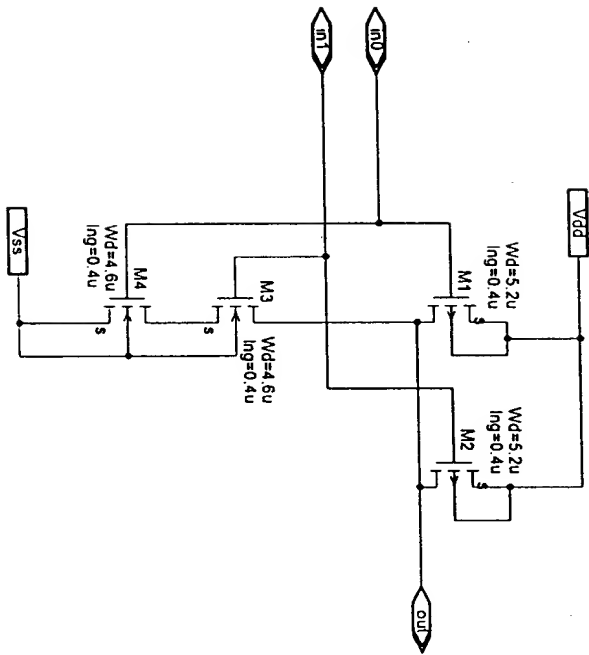


FIG. 133



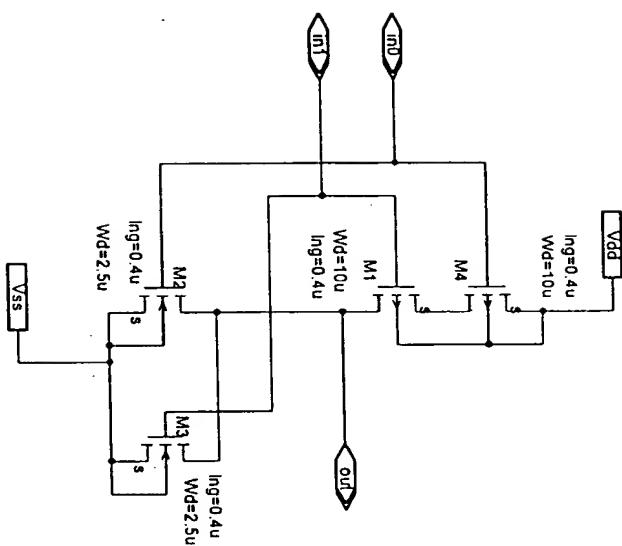


FIG. 134



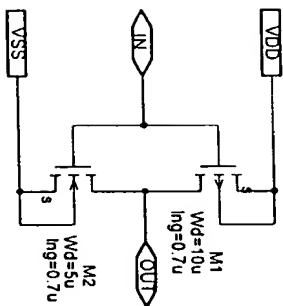


Fig. 13c

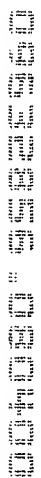


Fig 137

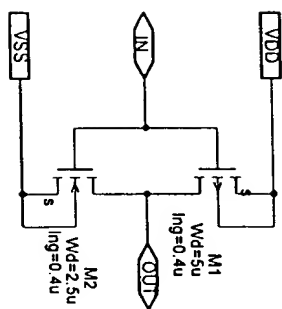
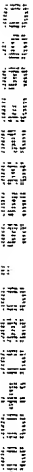


Fig. 138



F. 2c. 139







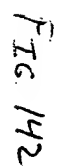
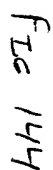
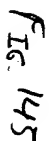




Fig 143



[illegible]

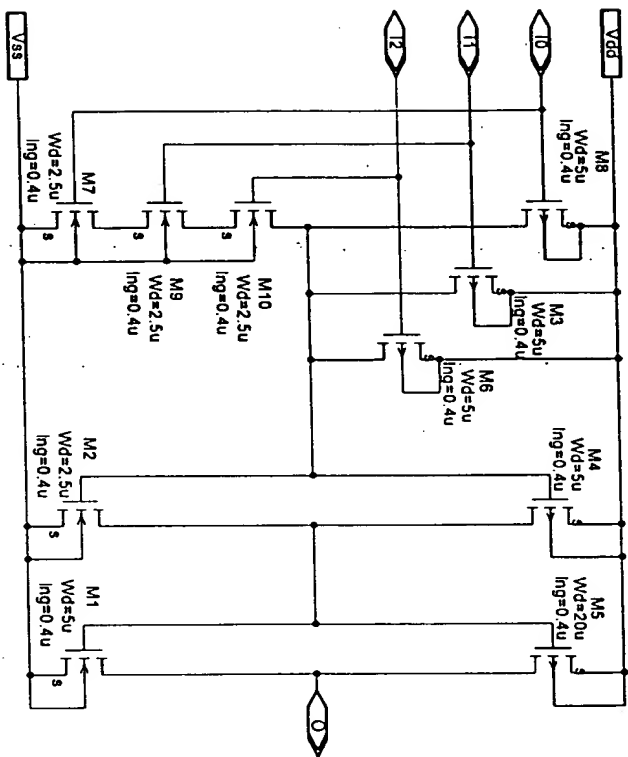


Fig. 14/6

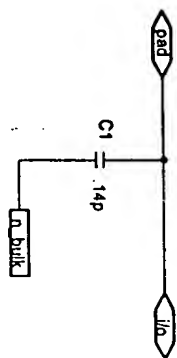


FIG. 147

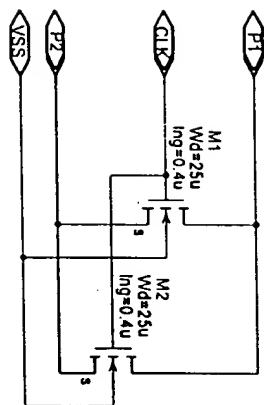
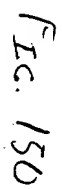


Fig. 148







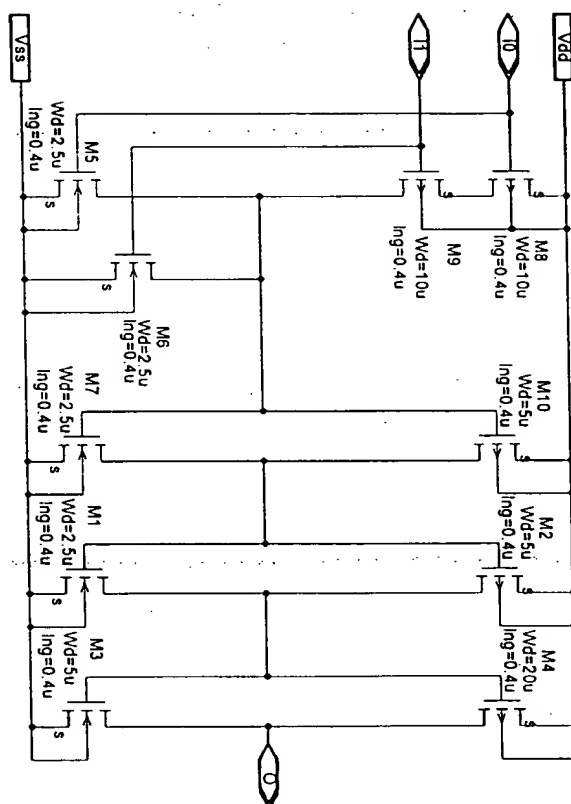


Fig. 151

any other data, not shown, may be obtained from the manufacturer.

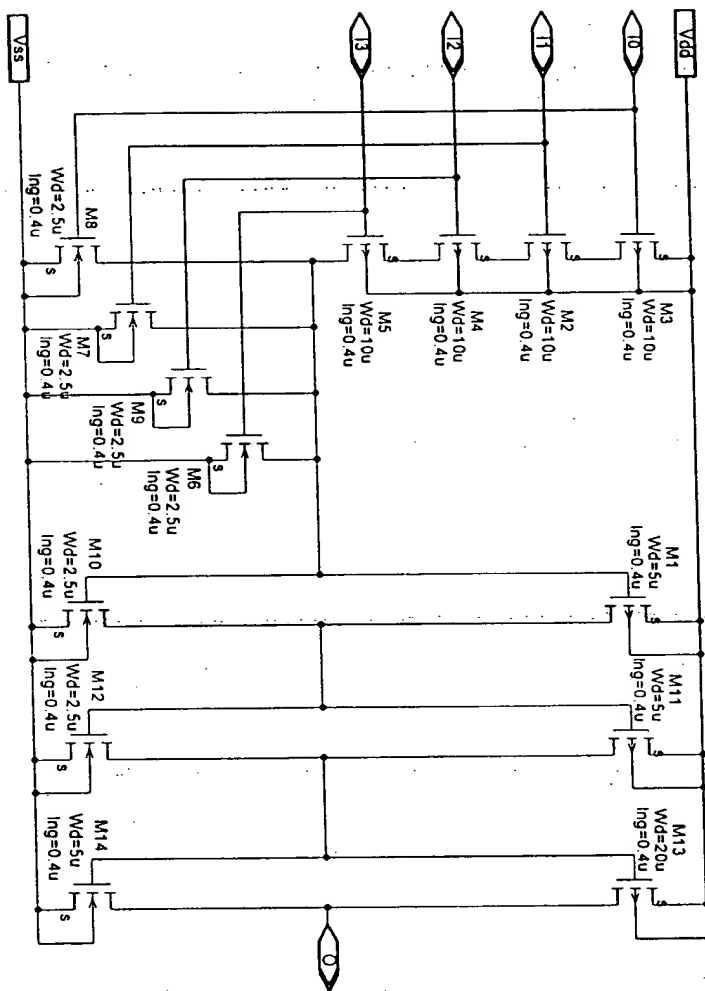
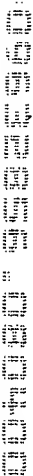


Fig. 152



File. 153

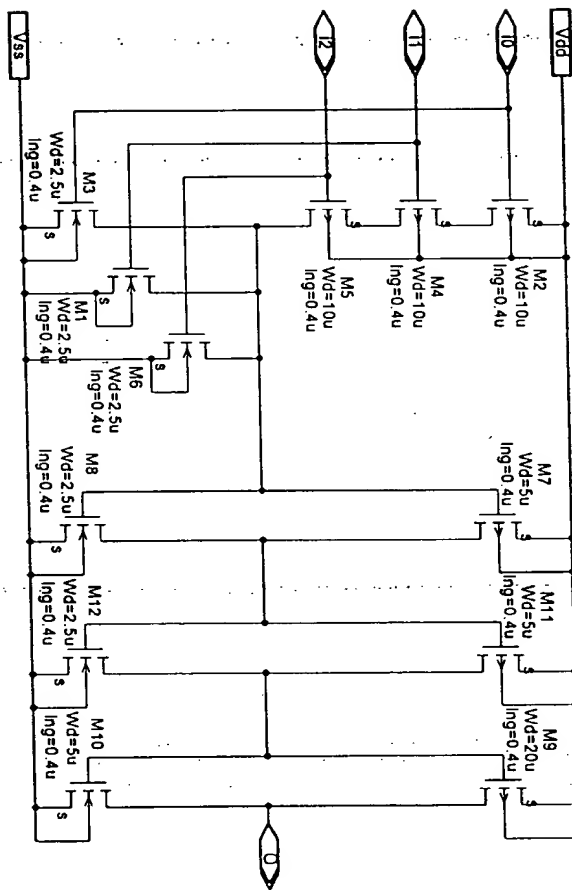
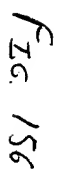
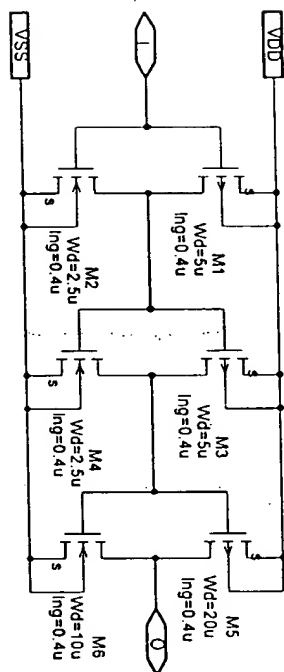


Fig 154







$\sqrt{I_6}$  157



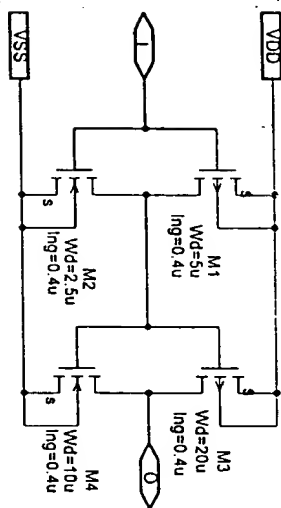


Fig. 158

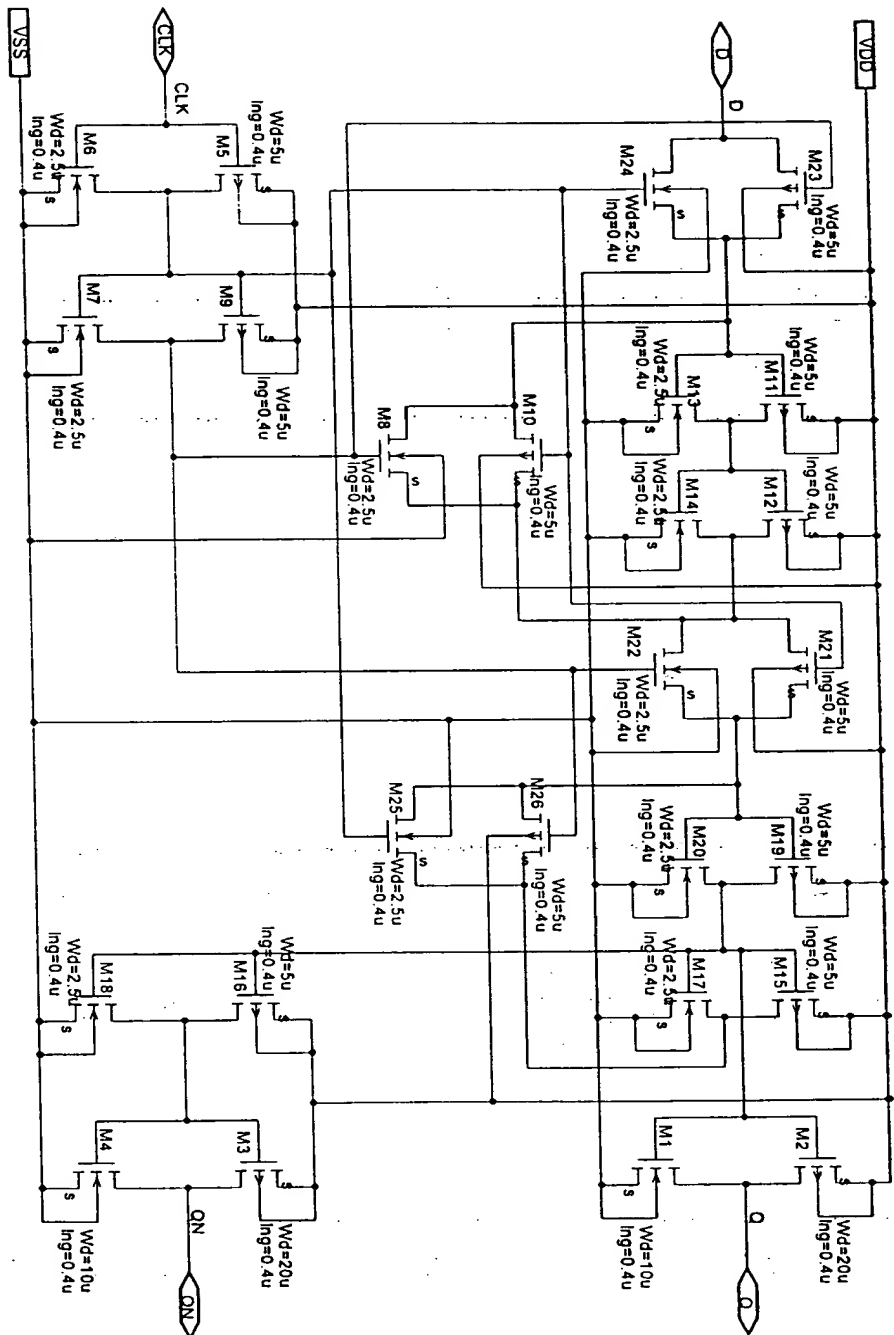


Fig 159

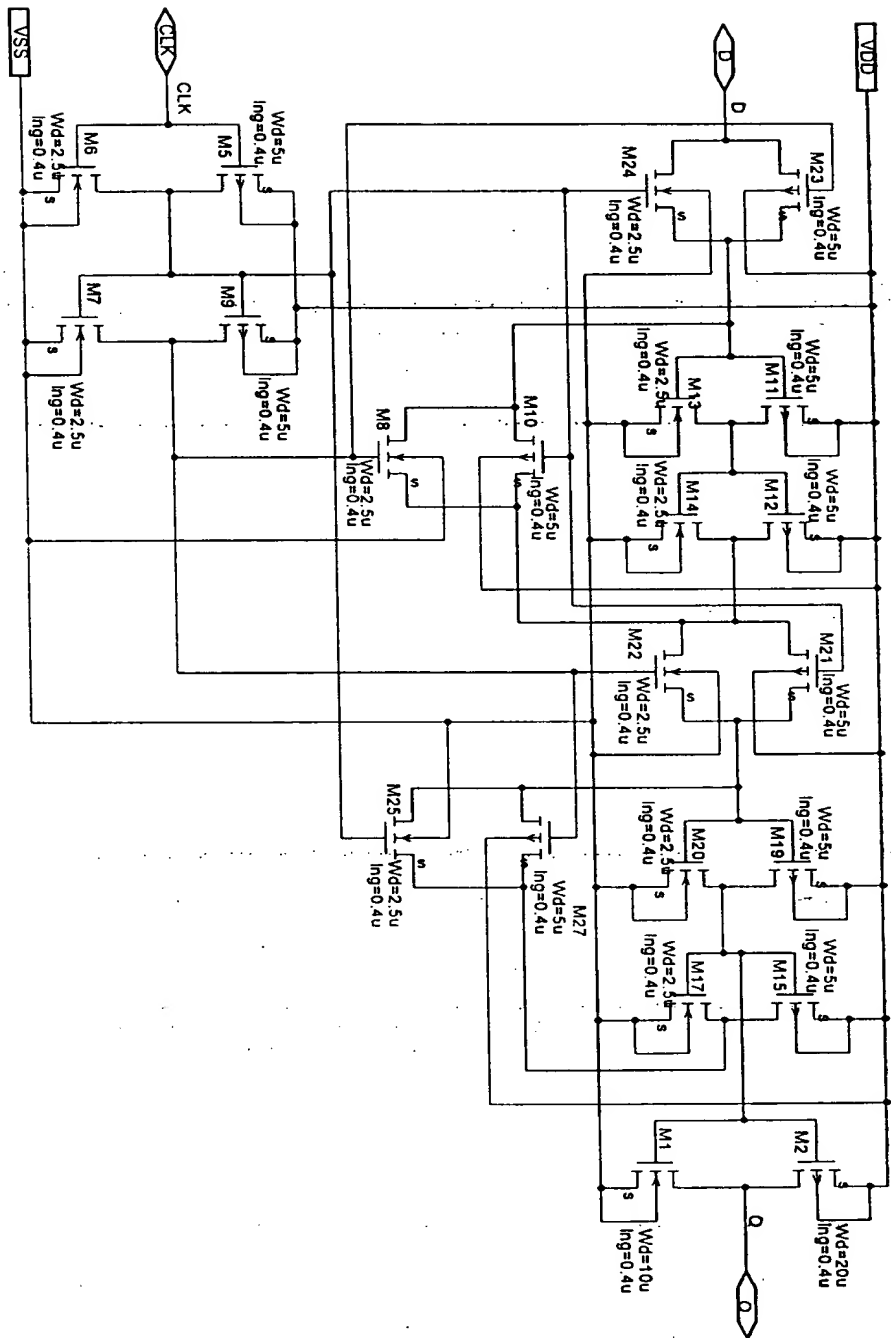


Fig. 160

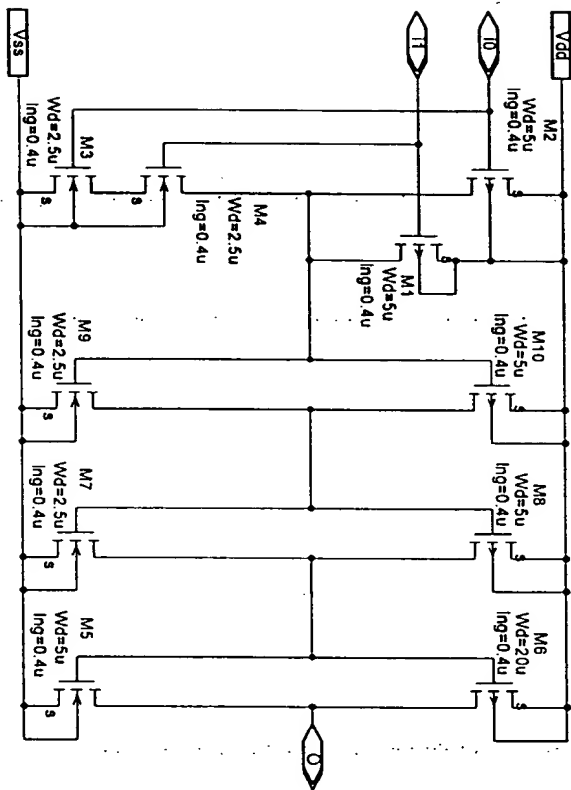


FIG 161